

SPHERiC NEWSLETTER

Singapore Population Health Improvement Centre

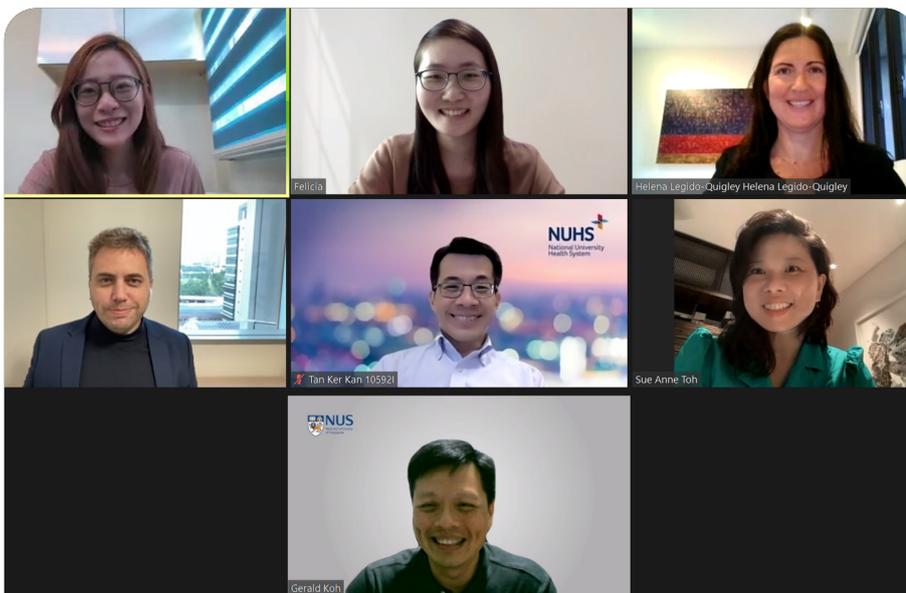
Issue 09 - July 2022

Final Newsletter

When SPHERiC was established in 2017 via a competitive NMRC Centre Grant, we aimed to play a proactive, impactful role in advancing population health. We were clear that population health is not limited to one clinic, one hospital, one community or even one cluster. Fast forward to 2022 – population health is taking centre stage, and Singapore’s progress with Healthier SG is one testimony to that.

The COVID-19 pandemic threw a curveball, but the SPHERiC family responded and contributed in complementary ways – spanning from population health analytics that provided guidance to policies, research that supported our front-liners and primary care colleagues, to work on pandemic preparedness at a global level. We are also especially proud to have provided a platform and concrete support to talented young investigators, including SPHERiC Fellows, working on population health research in various settings.

We have nothing but gratitude for the opportunities that SPHERiC has had to leave an indelible mark on population health nationally, regionally and internationally. We would like to express our heartfelt thanks to all members, collaborators, and advisors who have made this journey so incredible. We sincerely hope you have enjoyed not only reading about these efforts in our newsletters over the years, but also the shared experiences and enduring friendships formed as we work together to advance population health!



The SPHERiC Core PIs and Admin Team (from left to right, top to bottom):
Tan Ke Wei, Felicia Yue, A/Prof Helena Legido-Quigley, A/Prof Alex Cook,
A/Prof Tan Ker Kan, Dr Sue-Anne Toh, Prof Gerald Koh

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Thank you!

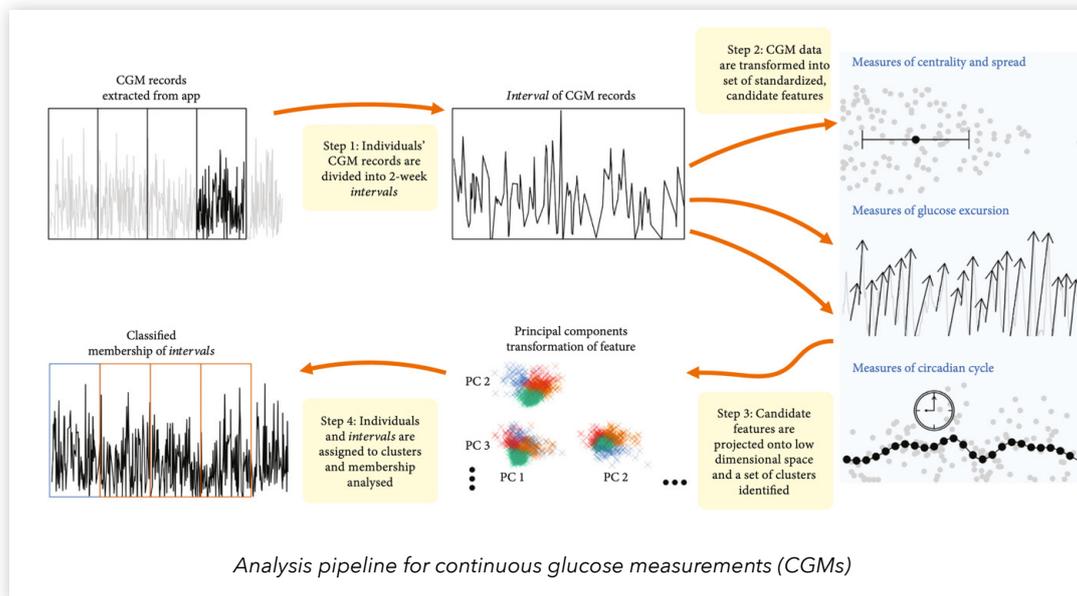
Population Health Analytics Core

TO FACILITATE COLLECTION AND ANALYTICS OF DATA ON HEALTH, SOCIAL AND BEHAVIOUR THROUGH DEVELOPING CAPABILITIES TO POLL A READY PANEL TO OBTAIN REPRESENTATIVE DATA, AND PERFORM AND VISUALISE POPULATION LEVEL ANALYTICS LAYERED WITH DETERMINANTS OF HEALTH.

Glucotypes of People Living with Diabetes

In collaboration between SPHERiC's PHAC and NOVI Health, a start up by SPHERiC director Dr Sue-Anne Toh, we used big data techniques to determine diabetic patients' glucotypes - groupings of patients with similar blood glucose dynamics over the course of the day.

To this end, research assistant Mao Yanan developed an analytics pipeline to extract data recorded at an irregular frequency through continuous glucose monitoring sensors, and convert them into a low dimensional summary that allowed individuals to be compared.



The pipeline unveiled four distinct classes of diabetic patients: those with well controlled blood glucose, with the most time in range; those brittly controlled with high glucose variability; and those with suboptimal control, either with postprandial hyperglycaemia or with fasting hypoglycaemia.

There were systematic differences between members of the four groups in the observed outcome, as well as in demographic correlates. For instance, older individuals were more likely to fall into one of the suboptimal control groups. Future research will assess whether interventions can consistently change the glucotype to a lower risk group.

For more information: <https://doi.org/10.34133/2022/9892340>



It's been quite exciting to uncover these differences in patient profiles. We're continuing to collaborate with NOVI Health to look into other ways that analytics can help inform the management of patients in the community as well as in hospitals.

Associate Professor Alex Cook - SSHSPH, National University of Singapore



Message from the PHAC Research Team



PHAC
Population Health Analytics Core

“Over the lifespan of SPHERiC, we have shown the importance of analytic techniques in population health through our work with the health system and government partners. The PHAC has contributed to public health campaigns—against COVID-19, HIV, unhealthy diets, smoking and others—by using models and statistical techniques to act as lens through which public health problems can be viewed more clearly. Although the grant is coming to the end of its funding cycle, the goals of improving health in Singapore through population health research lives on in those who have contributed to PHAC over the years. So stay tuned!”

Health Systems And Models Of Care Core

ENABLES BETTER UNDERSTANDING OF CURRENT CARE MODELS AND THEIR GAPS, HOW HEALTH SYSTEMS AFFECT ACCESS, DELIVERY AND EFFECTIVENESS OF CARE AND ITS IMPACT ON HEALTH, AS WELL AS FACILITATES THE TRANSLATION OF THIS UNDERSTANDING TO DESIGNING, IMPLEMENTING AND EVALUATING INNOVATIVE CARE MODELS, WITH A FOCUS ON CARE INTEGRATION AND COMMUNITY CARE.

COVID-19 Preparedness and Response: Implications for Future Pandemics

The COVID-19 pandemic put every country and the global health system to the test. Responses were shaped by diverse and complex political and social systems. Together with international experts, scientists and members of The Independent Panel for Pandemic Preparedness and Response (IPPPR), A/Prof Helena Legido-Quigley and her team published a nine-paper series in the British Medical Journal in November 2021.

This collection comprised unparalleled analyses of 28 high, middle, and low-income country responses to COVID-19 and drew on the work and analysis of the IPPPR. The series examined several facets of national response including the challenge of narratives that falsely dichotomised and thereby polarised debates; qualitative factors including leadership, trust, social cohesion, and culture; the importance of investment in public health, communication and community engagement; and the drivers, complexities and uncertainties that leaders faced and had to overcome.

Based on real-world experience, the collection provided policymakers with a road map to prepare for the next health threat, including whole-of-society approaches, treating pandemic tools as global commons, and ensuring equity, communities and human rights are central to preparing for and responding to the next threat. Lessons learnt from country experiences can serve as a guide to improve pandemic preparedness and shape resilient health systems.

For more information: <https://www.bmj.com/covid-19-preparedness-and-response>



Message from the HSMCC Research Team



HSMCC
Health Systems and
Models of Care Core

The team would like to take this opportunity to thank our local and overseas collaborators, SPHERiC, and NUS Saw Swee Hock School of Public Health for their advice and continued support over the years.

“We are grateful for the opportunities that had helped broaden our perspectives through a diverse range of research projects. Despite the uncertainty this year, our collaborators have continued their commitment to work with us. These partnerships are positive steps in expanding our research networks and contributing to global health. It has been an extraordinary journey for us. We look forward to more meaningful collaborations in the future. Onwards and upwards!”



The HSMCC Research Team (from left to right, top to bottom):
Tan See Mieng, Foo Chuan De, Pami Shrestha, Monica Verma, Alvin Chua,
A/Prof Helena Legido-Quigley, Tan Mei Jin Melisa

Implementation Science Core

PROVIDES A MULTI-DISCIPLINARY APPROACH TO TEST NEW APPROACHES TO IMPROVE HEALTH PROGRAMMING; INVESTIGATES AND ADDRESSES MAJOR BARRIERS THAT IMPEDE EFFECTIVE IMPLEMENTATION. EVALUATIONS WILL ALSO EMPHASISE A MIXED METHODS PERSPECTIVE, INTEGRATING QUALITATIVE RESEARCH, ECONOMIC EVALUATION AND DECISION ANALYSIS, TO PROVIDE INSIGHT AND DEPTH OF UNDERSTANDING.

Message from

the ISC Research Team



ISC
Implementation
Science Core

DEAR COLLEAGUES,

Implementation Science Core (ISC) was created with the goal of applying a multi-disciplinary, mixed-methods approach to investigating barriers that impede effective implementation of health programmes in Singapore. To that end, ISC has had the privilege to serve the medical and public health community in a multitude of ways over the past five years.

We have focused our efforts heavily on the forefront of Singapore's public health challenges – the silver tsunami. With our collaborators from the NUHS Centre for Health Services and Policy Research (CHSPR) and the Tsao Foundation, we embarked on such initiatives as reviewing the Self-Care for Older Persons (SCOPE) Project which aimed to build self-confidence and empowerment in community-dwelling elderly. Here, we helped to establish that the programme had seen success and a warm reception by participants, while also co-suggesting potential improvements to prepare it for upscaling to a national level.

ISC ventured deeply into key issues surrounding healthcare in the elderly, such as healthcare utilisation and cost trajectories for stroke patients. We also contributed to the NUHS tele-rehabilitation programme, which saw collaborations with Integrated Health Information Systems (IHIS) and T-Rehab Pte Lte to develop the Smart Health TeleRehab platform. Piloted in 2017, this platform allowed patients recovering from stroke, limb fractures and amputations, and musculoskeletal conditions to engage in rehabilitative programmes at home – increasing accessibility of rehab to patients and caregivers, and allowing more therapy sessions to be available to a larger pool of patients.

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Implementation Science Core

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Message from

the ISC Research Team



ISC
Implementation
Science Core

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Apart from the ageing population, ISC also embarked on studies examining the factors influencing colorectal cancer (CRC) screening in Singapore, and have collaborated with the Singapore Cancer Society (SCS) to find that individuals with faecal immunochemical test (FIT) kits positive were aware that earlier diagnosis via colonoscopy could improve survival if CRC was detected — non-compliant individuals were concerned about bowel preparation and the cost of colonoscopy, and compliant individuals were twice as likely to have directly received a physician's recommendation to undergo screening. These findings were shared with our key collaborators in the Health Promotion Board and Ministry of Health.

Finally, when COVID-19 struck the country in 2020, ISC played our part in advocating the concerns of our frontline colleagues. We found that the primary care community valiantly accepted the possibility of infection and increased workload from treating potential COVID-19 cases, and had a high level of perceived pandemic preparedness. However, private sector primary care physicians were far more likely to both feel that they had an unacceptable exposure risk and saw others avoiding their loved ones because of their job as a doctor. We also highlighted the perspectives of our emergency medicine professionals, who professed the value of a close-knit team culture in contributing to their psychological resilience as the pandemic wore on.

As all good things must end, and SPHERiC draws to a close, we in ISC would like to express our heartfelt thanks to the various friends, collaborators, and advisors who have made this amazing journey what it is.

Until then, we wish you the very best of health and happiness!

Best regards,

Prof Gerald Koh, A/Prof Tan Ker Kan, and the SPHERiC ISC team

Enhancing Capabilities In Population Health



Dr Seah Betsy is a postdoctoral fellow at the Alice Lee Centre for Nursing Studies, NUS, and was awarded the SPHERiC Fellowship in April 2019. She shares with us her research and achievements, and what she hopes to accomplish in the area of population health research in the future.

Focus on SPHERiC Fellow

“ I felt immensely privileged and humbled to be awarded the SPHERiC Fellowship, which has spurred my confidence as an early-career researcher. More importantly, it has re-affirmed the direction of my research on applications of salutogenic principles as positive health concepts, to promote health and wellness among older adults.

The Fellowship has allowed me to share my research findings with like-minded peers from relevant disciplines at the International Conference on Salutogenesis. It broadened my perspectives and professional networks, which were beneficial to future research collaborations and defining relevant objectives further. It also provided me opportunities to publish in open-access peer-reviewed journals, which expanded visibility of my PhD research topics.

I will continue to gain deeper knowledge on mechanisms influencing health-promoting strategies among older adults, as well as apply other salutogenic-related positive concepts, such as the purpose in life, for people to live life fully. ”

Sharing Knowledge

SPHERiC RESEARCH CORE PRINCIPAL INVESTIGATORS SHARED THEIR KNOWLEDGE AND EXPERTISE WITH THE RESEARCH COMMUNITY AND THE PUBLIC THROUGH VARIOUS PLATFORMS.

The Straits Times: Dengue Is Not 'Next COVID-19' But Threat Must Still Be Taken Seriously: Experts, 16 May 2022

A/Prof Alex Cook shared his expert opinion on the surge of dengue cases and its potential impact on public health in Singapore, as well as the key differences between dengue and COVID-19. Other than performing the steps recommended from the mozzie wipeout campaign launched by the National Environmental Agency, A/Prof Cook also provided three recommendations on how the population can protect themselves.

For more information: <https://www.straitstimes.com/singapore/health/dengue-is-not-next-covid-19-but-threat-must-still-be-taken-seriously-experts>

Circle U. Café Oslo: How to Prepare for the Next Pandemic? 02 Jun, 2022

A/Prof Helena Legido-Quigley was invited by the Centre for Sustainable Healthcare Education, University of Oslo and Circle U to share her expert opinion on how to prepare for the next pandemic, alongside the Right Honourable Helen Clark. She also offered her views on how scientific advice could play an important role in the crisis management cycle, and highlighted The Independent Panel for Pandemic Preparedness and Response's future research agenda.

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