

SPHERiC NEWSLETTER

Singapore Population Health Improvement Centre

Issue 05 - February 2020

Embarking on a New Year

DEAR COLLEAGUES

As we usher in 2020, SPHERiC would like to thank everyone for the collective efforts towards making 2019 a fruitful year for our Centre, and the communities we serve.

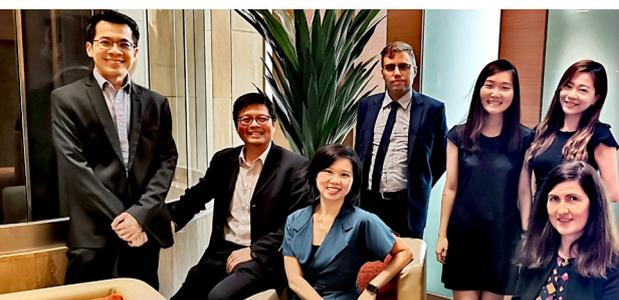
The beginning of 2020 is not without its challenges. With the declaration of a public health emergency of international concern by the World Health Organisation, the outbreak of Novel Coronavirus (COVID-19) quickly came into our area of focus. In collaboration with A/Prof Hsu Li Yang and renowned comic artist, Mr Sonny Liew, the Centre has supported the launch of educational comic series to raise public awareness on common misconceptions and address uncertainties regarding the outbreak. In a separate stream, researchers from our Population Health Analytics Core are working with the Ministry of Health and National Centre of Infectious Diseases, to forecast the outbreak and impact of control scenarios, as well as help with outbreak analytics.

Current crisis aside, the Centre has been making progress on achieving our objectives of developing capabilities in population health research, as well as fostering collaborations with policy makers, national agencies, communities, other Regional Health Systems, and international experts. We remain focused on translating evidence-based strategies into tangible improvements in population health for Singapore. In the academic arena, the Centre has contributed to 41 publications in peer-reviewed journals, of which 12 were in the top 10% journals in their respective fields. We have also supported 13 Seed Funding Awards and 4 Fellowship Awards aimed at nurturing projects of high impact potential and/or talented young investigators capable of being next generation leaders in population health. In addition, the centre has organised 7 workshops, as part of our commitment to develop population health research capabilities and capacity in Singapore.

As SPHERiC is entering into its third year, we are as excited as ever to be working together with you. With all the valuable inputs received, we look forward towards bringing greater impact in population health, as we continue to advance efforts in multidisciplinary research, develop research capabilities through funding opportunities, mentorship and workshops, and catalyse enhancements in Singapore's healthcare system.

SPHERiC STRATEGIC PLANNING RETREAT

On 8 Jan 2020, the management team of SPHERiC came together for a strategic planning retreat, to discuss and develop the Centre's future strategic directions.



SPHERiC Team.
From left to right:
A/Prof Tan Ker Kan,
Prof Gerald Koh,
Dr Sue-Anne Toh,
A/Prof Alex Cook,
Ms Felicia Yue (Admin),
Ms Tan Ke Wei (Admin), and
A/Prof Helena Legido-Quigley.

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CENTRE GRANT MID-TERM REVIEW PRESENTATION

On 10 Jan 2020, the SPHERiC management team provided an update on the Centre's progress to the National Medical Research Council (NMRC), as part of the Mid-Term Review, held at Park Royal Collection, Marina Bay.

[SPHERiC was established in August 2017, and is funded by the 4-year NMRC Centre Grant Programme under the NMRC.]

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.

Subsidising Influenza Vaccination to Improve Uptake in High-Risk Groups

Influenza remains a serious threat to the health of high-risk groups such as the elderly, infants and those who are immune-compromised, and pneumonia - which is often a sequelae of influenza infection - is the second leading cause of death in Singapore. Influenza vaccines can reduce this risk, but although vaccines are readily available in Singapore, vaccination rates are low, especially in high risk groups. It is possible that through subsidising the cost of vaccines, the government could increase uptake rates. We conducted a study to find out how the uptake rate would be affected by varying levels of subsidy.

Individuals over the age of 65 who had previously taken part in a study at the NUS Saw Swee Hock School of Public Health were randomized to one of four arms and sent information about influenza vaccination, a short questionnaire, and an 'offer' of supermarket vouchers if they completed the questionnaire and (for three of the arms) provided a vaccination certificate indicating they went for vaccination. The value of the vouchers differed in the arms to represent varying levels of subsidy.

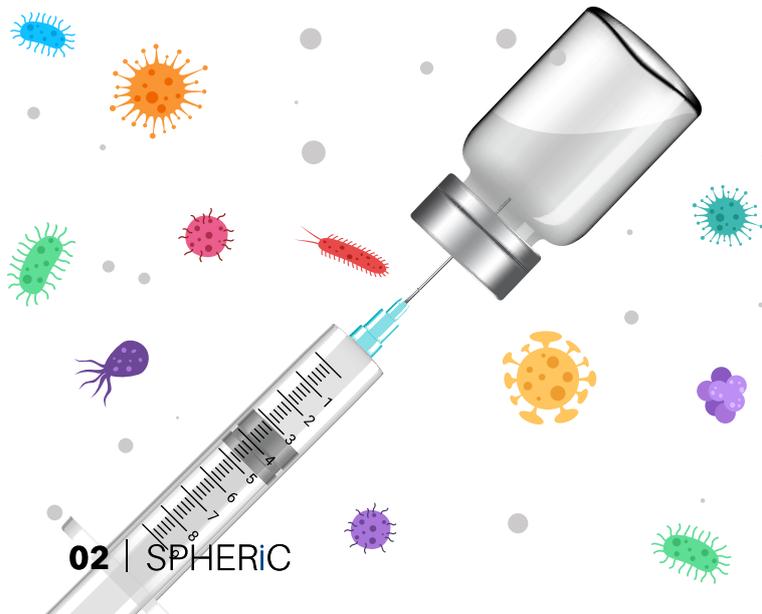
We found that increasing the subsidy led to more people going for vaccination, but were surprised to find that offering \$30 did not increase participation rate

significantly compared to offering \$20. Given that the cost of vaccination in polyclinics is now about \$30, this suggests requiring a small co-payment (possibly through Medisave) would have almost as much effect as making it free.

The research is timely as the Ministry of Health is in the process of revising its adult immunization programme to introduce subsidies for recommended vaccines. Despite these successes, we could not increase the vaccination rate among elderly who were still working through subsidies, suggesting that alternative strategies to reach this group such as workplace vaccination may be valuable.



Influenza vaccination is recommended for everyone over the age of 65, but only about one in six elderly in Singapore gets an annual vaccination. We need to find better ways to encourage more in this group to get vaccinated so as to reduce the number of deaths arising from influenza-related complications.



One of the limitations of the study is that even with nearly full subsidies, the participation rate was low, because it was a mailed survey. We are currently working with SATA CommHealth to offer subsidised vaccines at their primary care clinics, which may be a more effective way of expanding such a programme reach.

Associate Professor Alex Cook - SSHSPH, National University of Singapore



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.

Sharing Insights on Women in Science and Non-Communicable Diseases at the 14th Singapore Public Health & Occupational Medicine (PHOM) Conference



SPHERiC team with A/Prof Vernon Lee (left) and Prof Vivian Lin (right) as part of Women in Global Health Panel Discussion, at the 14th PHOM Conference in October 2019.

Gender roles and norms influence opportunities and access to services by different population groups. Ensuring gender equality and empowering women are important mechanisms to accelerate sustainable development and achieve better health outcomes. Solutions to narrow the gender gap in public and global health could contribute to improving the lives of both men and women.

Researchers from SPHERiC's Health Systems and Models of Care Core had the opportunity to join a panel discussion on Women in Science at the 14th PHOM Conference. A/Prof Helena Legido-Quigley, who moderated the session, shared the findings from a mixed methods study on gender and ethnic diversity in leading public health universities. The study revealed clear gender and ethnic disparities in career progression despite numerous diversity

policies and action plans reported, with ethnic-minority women possibly being doubly disadvantaged. To encourage and support women in science, Prof Vivian Lin, Executive Associate Dean at Li Ka Shing Faculty of Medicine, The University of Hong Kong, highlighted the need for a network of support and mentoring for women. A good rapport between mentors and mentees is often a key ingredient in fostering a supportive career environment. Dr Sue-Anne Toh, SPHERiC Centre Director, encouraged women to stand up for what we believe in, be resilient and push through adversity. A/Prof Vernon Lee, Director, Communicable Diseases, Ministry of Health, shared the importance of having flexibility to support women in performing multiple roles in life. Representing the future generation, Ms Melisa Mei Jin Tan shared about her experiences and possible solutions to foster women's leadership in global health.

Our team presented four posters on non-communicable diseases (NCDs) studies. Two posters were presented on end-stage renal disease (ESRD), an NCD of high prevalence in Singapore especially among the elderly population. The first study identified several factors from the perspectives of elderly ESRD patients and caregivers, that could be considered during the creation and implementation of treatment decision-making aids. The second study provided insights into the biopsychosocial impact of ESRD and dialysis, as well as cultural and religious factors that shape the experiences and coping mechanisms of elderly ESRD patients and caregivers, to inform the development of more holistic and person-centred services in Singapore.

The third study highlighted findings from a scoping review that identified six qualities of good governance for the global response to NCDs. These qualities are: global leadership, multi-sectoral partnership, global solidarity, advocacy, accountability, equitable governance for health. The study also emphasised the need to consider how policy choices can be influenced through framings of NCDs, which include commercial determinants of health, sustainable development and women's right to health. Finally, the fourth poster displayed findings from a qualitative study exploring the roles, attitudes and perspectives of key actors in the global response to NCDs.

Our team is incredibly grateful to SPHERiC's Health Systems and Models of Care Core for giving us the opportunity to share our team's work on NCDs at the 14th PHOM Conference.



To improve health outcomes, we strive for better science and evidence. To create a better everyday life, we need to recognise our differences, appreciate our similarities and foster harmony for the common causes. Never let today limit our potential to achieve a better tomorrow.

**Melisa Tan (middle in the photo) –
Research Associate, NUS SSHSPH**



In light of Singapore's ageing population and the growing burden of ESRD that is disproportionately borne by the elderly, there is a need to consider both clinical and patient perspectives. Listening to the voices of patients is crucial to developing more person-centred services in Singapore.

**Emeline Han (right in the photo) –
Research Associate, NUS SSHSPH**



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.



Uncovering the Factors Influencing the Colorectal Cancer Screening Process Among Average Risk Singaporeans

Locally, colorectal cancer is the most common cancer in men and the second most common in women. Screening allows for earlier detection of cancer or precancerous polyps, and enables interventions to be performed before further progression of the disease. Colorectal cancer screening has also been demonstrated to be a cost-effective preventive measure.

Although considerable efforts by the Singapore Cancer Society (SCS) and Health Promotion Board (HPB) have been made to offer free faecal immunochemical test (FIT) kits at various venues across Singapore, FIT uptake remains less than ideal. For example, a review of data collected by SCS in 2016 revealed that only 3.75% of the screening-eligible population aged 50 - 59 years actually completed their annual FIT kit screening.

In the current system, individuals with a positive FIT result are recommended to undergo consultation and diagnostic colonoscopy with a gastrointestinal specialist. With proper follow-up, incidence of colorectal cancer in FIT-positive individuals can be reduced by nearly 20% and relative risk of mortality by about 30%.

Unfortunately, what is often lesser known is that only a third of all FIT-positive individuals in Singapore complete the whole follow-up process. Moreover, hesitance in undergoing colonoscopy after a positive FIT result increases risk of mortality by 1.4% for every month of delay.

Commencing in late 2019 and in collaboration with the SCS, the National University Hospital (NUH) Colorectal Centre and the National University Polyclinics (NUP), SPHERiC's multi-phase project hopes to holistically study the factors that significantly influence individuals' decisions to undergo and complete the colorectal cancer screening process.

In the first phase, SPHERiC will utilise mixed-methods to examine the knowledge, barriers and facilitators pertaining of FIT kit uptake among average risk Singaporeans in the NUP primary care community. We are also exploring the factors associated with follow-up consultation and colonoscopy among FIT-positive individuals recommended to the NUH Colorectal Centre.

These initial findings will allow SPHERiC to develop comprehensive behaviour change interventions together with NUP and NUH, seeking to address the intra- and interpersonal and wider, system-level factors that can enhance colorectal cancer screening compliance in these communities. The final phase of the project will see SPHERiC evaluate implementation feasibility and cost-effectiveness, drawing on data consolidated from previous phases as well as the international body of literature to investigate the upscaling potential of these interventions.



Only you can save yourself, and that's the hardest part. Understanding the difficulty is key.

Dr Tan Ker Kan – Senior Consultant, Division of Colorectal Surgery, National University Hospital



Enhancing Capabilities In Population Health

Learning from International Experts

Prof Vivian Lin, Executive Associate Dean of Li Ka Shing Faculty of Medicine, Professor of Public Health Practice in The University of Hong Kong, was in Singapore from 14th to 17th October 2019.

During her visit, Prof Lin met with SPHERiC team, to share her views and insights on the work done in Singapore in how health systems affect access, delivery and effectiveness of care and its impact on health. She highlighted the importance of community outreach, and the involvement of various parties such as policy makers, service providers and the community, to ensure sustainability. She also provided successful examples of how this was conducted in Australia, and encouraged Singapore to learn from the experience.

Prof Lin gave valuable insights into the health challenges Singapore would face, including managing non-communicable disease (NCD) risk factors, while having to balance threats of communicable diseases. She discussed the importance of primary care and its range of support services in managing complex NCDs' risk factors, and how financing and hospital-

centric systems could be improved to further support the role of primary care. Additionally, she suggested studying international policies to incorporate relevant ideas into Singapore's context, with the comparative chosen country dependent on the issue as Singapore's health financing system is unique in the world. Lastly, Prof Lin welcomed collaborations with SPHERiC, in shaping the Centre's future research direction.



Prof Vivian Lin (third from right) with the SPHERiC team

Sharing Knowledge

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



SPHERiC team with A/Prof Vernon Lee and Prof Vivian Lin (right photo, second and third from left) as part of Women in Global Health Panel Discussion, at the 14th Singapore Public Health & Occupational Medicine (PHOM) Conference in October 2019.



Prof Mark Jit (left photo) and A/Prof Alex Cook (right photo) conducting the Introduction to Infectious Disease Modelling Workshop organised by SPHERiC, in conjunction with Options X for the Control of Influenza Conference, held in Singapore in August 2019.

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