Issue 26 Jul-Aug 2016

A Newsletter For The Research Community In Singapore

National Healthcare Group

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ACCELERATING RESEARCH

The Future of the Biomedical Sector in Singapore

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New Head of Research at National Skin Centre

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Dr Ng Oon Tek clinches the NMRC Clinician Scientist Award (CSA)!

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Thailand Ministry of Public Health Visits NHG Research & Development Office

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Spending the Grey Dollars on Novel Oral Anticoagulants in the Elderly

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Driving Clinical Research at TTSH

In this instalment of 'NHG's Research Journey' series, Tan Tock Seng Hospital (TTSH) shares on how its research support has evolved with the ever-changing research landscape. Click here to find out more

Psychology Research in the Transformation of Primary Care

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RESEARCH NEWS

Congratulations to the FY2016 NHG Clinician-Scientist Preparatory Programme (CSPP) Awardees

and

A*STAR-NHG-NTU 2nd Skin Research Grant (SRG) Awardees!

TTSH Metabolic Disease Research Programme

The STOP Dengue Research Programme

Award for Annals, Academy of Medicine Best Publication 2015

RESEARCHERS' FEATURE

Dr Lee Tau Hong
Associate Consultant
Department of Infectious Diseases
Tan Tock Seng Hospital

Dr Phua Chu Qin
Registrar
Department of Otorhinolaryngology
Tan Tock Seng Hospital

Dr Chan Mei Leng
Principal Occupational Therapist
Tan Tock Seng Hospital

EDUCATION

A Clinician-Scientist's Quest: Minimising the Morbidity of Head and Neck Cancer Treatment

Qualité

Research Training Events

Congratulations to A*STAR-NHG-NTU 2nd Skin Research Grant (SRG) Awardees!

The 2nd call for A*STAR-NHG-NTU Skin Research Grant (SRG) was jointly launched in September 2015. This was a follow-on call to the inaugural grant in October 2013 which received great interests from the ground.

Besides promoting collaborative research, the main objectives of the 2nd SRG also included exploring the impact and burden of skin diseases affecting the local and/or Asian population, and generating new knowledge and outcomes which could lead to improved diagnosis and management of skin diseases.

A total of 36 applications were received. After a rigorous review by the scientific reviewers and deliberation by the Skin Selection Panel; 9 applications were selected for funding. Congratulations to all successful awardees!

No	Project No.	Project Title	Clinical Lead-Principal Investigator	Non-Clinical Lead-Principal Investigator
1	SRG/15005	Development Of Sustained Drug Release From Scaffolds To Promote Chronic Wound Healing	Dr Kwek, Ernest *Orthopaedic Trauma, Tan Tock Seng Hospital*	Prof Becker, David *Lee Kong Chian School of Medicine, NTU*
2	SRG/15010	Targeting The Inflammasome Pathway For Therapeutic Treatment Of Atopic Dermatitis	Dr Tan Sern Ting, Eugene *Dermatology, National Skin Centre*	Dr Mortellaro, Alessandra *Singapore Immunology Network, A*STAR*
3	SRG/15014	Investigating The Role Of Dendritic Cells In T-Cell Mediated Cutaneous Disorders	Dr Chu Poh Cheong, Roland *Dermatology, National Skin Centre*	Dr Ginhoux, Florent *Singapore Immunology Network, A*STAR*
4	SRG/15019	Identifying Novel Genetic And Molecular Markers To Differentiate Keratoacanthoma From Squamous Cell Carcinoma	Dr Tan Wee Ping *Dermatology, National Skin Centre*	Prof Lane, Ellen Birgitte *Institute of Medical Biology, A*STAR*
5	SRG/15022	The Social And Economic Burden Of Atopic Dermatitis Among Children In Singapore - Establishing A Longitudinal Study Cohort	Dr Yew Yik Weng *Dermatology, National Skin Centre*	A/Prof Car, Josip *Lee Kong Chian School of Medicine, NTU*
6	SRG/15028	The Role Of Cellular Senescence In Age-Related Hair Depigmentation	Dr Lee Siong See, Joyce *Dermatology, National Skin Centre*	Dr Dreesen, Oliver *Institute of Medical Biology, A*STAR*
7	SRG/15032	Role Of Oxidative Stress And Mitochondrial Dysfunction In The Pathogenesis Of Vitiligo	A/Prof Thng Tien Guan, Steven *Dermatology, National Skin Centre*	A/Prof Tan Nguan Soon, Andrew *School of Biological Sciences, NTU*
8	SRG/15035	Developing Novel Keratin Templates As Dermal Equivalents - A Preclinical Study	Dr Tee Shang-lan *Dermatology, National Skin Centre*	A/Prof Ng Kee Woei *School of Materials Science & Engineering, NTU*
9	SRG/15036	Assessing Novel Carbohydrates For Skin Wound Repair	Prof Schmidtchen, Artur *Lee Kong Chian School of Medicine, NTU*	Dr Nurcombe, Victor *Institute of Medical Biology, A*STAR*

Did you KNOW?

With the advancement of non-invasive skin imaging techniques, diagnosis could be confirmed in some patients without a skin biopsy!

Interested to know more?

Click here to drop us your enquiry!

New Head of Research at National Skin Centre

We would like to congratulate Dr Tey Hong Liang on his appointment as the new Head of Research, at the National Skin Centre (NSC).

Dr Tey Hong Liang

Dr Tey is a Consultant and Clinician-Scientist at the National Skin Centre and he had been the Deputy Head of its Research Division for the last 3 years. He is a recipient of numerous research grants and the National Medical Research Council (NMRC) Transition Award (TA), and has authored more than 120 international peer-reviewed publications. Concurrently, he is the Head of NSC's Inpatient Dermatology Service, Consultant in-charge of the Itch Clinic in NSC and the Editor-in-chief of the Journal of Dermatological Research.

A/Prof Mark Tang was the Head of Research at NSC from 2007 to 2016. With his outstanding leadership, energy and passion, he was successful in delivering most, if not all, of the Research Division's goals. We wish him well in his future endeavours.

A group photo taken during the Research Division's farewell party for A/Prof Mark Tang

The Future of the Biomedical Sector in Singapore

On 9 May 2016, Murdoch University organized a panel discussion titled 'The Future of the Biomedical Sector in Singapore – Trends, Talent and Technology'.

The panel of speakers (in photo from right) included:

- Dr Chris Smith, *Sir Walter Murdoch Distinguished Adjunct Professor, Murdoch University and Consultant Medical Microbiologist, Cambridge University;*
- A/Prof Lim Tock Han, *Deputy Group CEO (Education & Research), NHG;*
- Prof Lim Seng Gee, *Professor, Department of Medicine, Yong Loo Lin School of Medicine, NUS and Senior Consultant, Division of Gastroenterology and Hepatology, NUH;*
- Asst Prof Sue-Anne Toh, *Director, NUHS Regional Health System Planning and Development; and*
- Mr Teo Cher Hwa, *Deputy Director, National Health Innovation Centre.*

The panellists shared insights into attracting private sector investments in R&D, the Research, Innovation and Enterprise plan 2020 (RIE2020), and talent development and retention in Singapore and discussed on what it really takes for Singapore to be a world-class biomedical hub.

Boosting Private Sector Investment on R&D	• Strong support from the government lays the foundation for a conducive ecosystem for private investors. • Researchers should tap on the government's good funding opportunities for collaborative projects to boost the research momentum.
Developing Talents With Innovative and Enterprising Aspirations	• Talents should be encouraged to challenge existing knowledge by establishing a learning culture based on an 'open door policy'. • Increased awareness of the research environment is needed so that talents are able to tap onto opportunities and recognise suitable mentors.
Preventing Over-Emphasis On Commercial Value From Stifling Researchers and Innovators	• Researchers should follow their passions and understand that research solutions and possibilities need not contribute solely in terms of commercial viability, but in other areas such as long term health benefits and cost savings as well.

Spending the Grey Dollars on Novel Oral Anticoagulants in the Elderly

This collaborative work highlights the difficult risk-benefit trade-off that healthcare professionals and older patients face when considering atrial fibrillation (AF) therapy. The decision on the appropriate medication should ultimately be individualised and based on shared decision-making that reflects treatment-related benefits, risks, cost and patient preferences.

The elderly population has a higher prevalence of chronic diseases and rationalising drug use is a constant challenge. The NHG Pharmacy and Therapeutics (P&T) Office, in collaboration with Tan Tock Seng Hospital (Institute of Geriatrics and Active Ageing, Department of Cardiology and Department of Pharmacy) and National Neuroscience Institute, conducted health technology assessment to provide evidence-based information on the use of antithrombotic therapies including novel oral anticoagulants (NOACs) in the elderly in 2015.

Using advanced network meta-analysis, we compared clinical outcomes of antithrombotic therapy including all available NOACs (apixaban, dabigatran, edoxaban and rivaroxaban) with warfarin and aspirin regimens. A total of 890,000 elderly patients from 25 randomised controlled trials (RCTs) and 24 non-randomised studies were analysed. Previously unattempted, we were able to project the costs and health outcomes associated with all these treatment options in a cost-effectiveness analysis (Fig. 1).

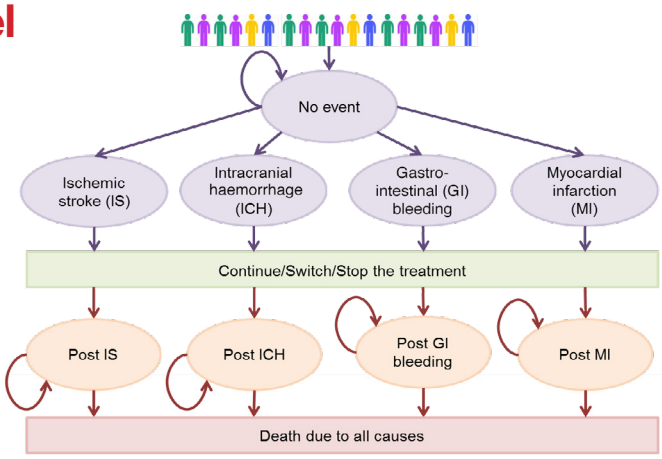


Fig. 1 Schematic representation of the decision-analytic model

Though efficacious, safe and cost-effective compared to warfarin in elderly patients with AF who are above 65 years old, NOACs provided benefits that appeared to be partially offset in the elderly above 75 years of age and in non-trial setting due to increased bleeding risks.

This work has been published in the International Journal of Cardiology. Click here to read more.

Contributed by
Dr Zhao Ying Jiao
Senior Research Analyst
P&T Office, Group Corporate Development
National Healthcare Group

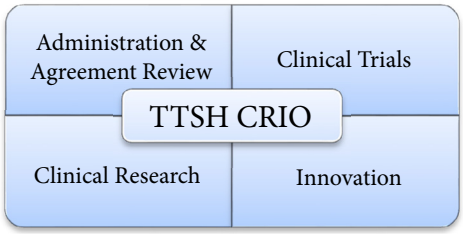
Driving Clinical Research at TTSH

In this instalment of 'NHG's Research Journey' series, Tan Tock Seng Hospital (TTSH) shares on how its research support has evolved with the ever-changing research landscape.

The TTSH Clinical Research Unit (CRU) was founded by the late Professor Feng Pao Hsii in 1998. In its early years, the CRU had less than 10 members and provided services in three areas: clinical epidemiology and statistics, clinical trials and ethics review.

In this intervening period of 18 years, the CRU evolved alongside the changes in the way we govern and conduct research. Now known as the Clinical Research & Innovation Office (CRIO), it has more than 40 members supporting various kinds of research endeavours of all TTSH staff ranging from basic science research to industry-sponsored clinical trials.

In recent years, our hospital has diversified into medical device innovation, health services and outcomes research, and clinical education research; allowing assimilation of clinical research into practice. The Innovation Office that was



The TTSH CRIO consists of four functional units which together help our clinicians with clinical trials, grant applications, collaborative agreements, statistics, publications, and research methodology training.

inaugurated in 2013 facilitates the conversion of ideas from our clinicians into physical equipment and devices that benefit our patients.

In line with RIE2020 where S$19 billion will be set aside for research and innovation in the next 5 years, the CRIO looks forward to supporting more research that has direct clinical applications. The most obvious are the development of diagnostic tests, imaging systems, therapeutics or computer-assisted management tools.

In 2014, the TTSH Research Laboratory (TRL) was setup. Our hospital never had the privilege of a centralised laboratory that serves every clinician who is in need of such services. Within these two years, our researchers have won competitive grants and published papers enabled by the TRL.

The direction and motivation for research have been subtly changing in public hospitals. TTSH will be keeping this in mind as CRIO expands and modifies her capabilities, never forgetting that the patient must be the ultimate beneficiary of all our research efforts.

Contributed by
Adj. A/Prof Leong Khai Pang
Clinical Director, Clinical Research & Innovation Office
Tan Tock Seng Hospital

The Metabolic Disease Research Programme at Tan Tock Seng Hospital

The main cause for high morbidity and mortality in patients with diabetes (type 1 or type 2) is vascular disease. Type 2 diabetes affects small (microangiopathy) or large vessels (macroangiopathy). Microvascular disease is the hallmark of retinopathy, neuropathy and nephropathy; whereas macroangiopathy in diabetes is manifested by accelerated atherosclerosis.

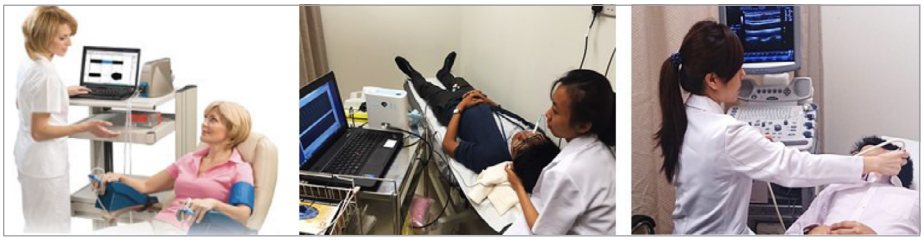
A current hypothesis for the initial lesion of atherosclerosis is endothelial dysfunction. Endothelial dysfunction has been documented in patients with type 2 diabetes, and also in individuals with type 1 diabetes especially when there is clinically manifest microalbuminuria, in individuals who have insulin resistance (e.g. obese patients), or who are at high risk for developing type 2 diabetes (i.e. impaired glucose tolerance, metabolic syndrome) and in patients with former gestational diabetes. Chronic inflammation and oxidative stress play a well-established role in the development of atherosclerotic disease.

We hope to study endothelial dysfunction in diabetes mellitus type 2 with a specific aim **to understand the mechanics and the pathways involved in endothelial dysfunction** and **to explore possible therapeutics to reverse or prevent endothelial dysfunction in diabetes mellitus. We also seek to understand the immune signatures, and the relevant differences in gene expression, transcriptomic profiles and other inflammatory markers in three ethnicities** with a long term view to identify biomarkers which may help to predict these complications in our patients.

We are currently doing multiple projects which enable us to establish a cohort of patients from our diabetes clinic. Clinical data is collected systematically and blood, urine and salivary samples are collected, cryo-preserved and stored for future analysis. The individual projects or analysis of specimens for any tests is done through individual research grants. We are doing physiological measurements for assessing endothelial function which include reactive hyperaemia index (RHI-EndoPAT), central aortic artery stiffness using SphygmoCor and carotid artery intima media thickness measurements (Fig. 1). Endothelial function markers (VCAM-1, ICAM-1, E-selectin), inflammation markers (hsCRP, PAI-1) and oxidative stress markers are also measured. Our current projects look at some targeted gene loci (haptoglobin/ vitamin D receptor) and we are storing DNA samples for a more complete analysis (exome sequencing/GWAS) in the future.

In the long term with this pool of patients, we also aim **to establish metabolomics, transcriptomics, genomics, and proteomics to provide a unique signature for each individual** to predict the risk for vascular complications and identify patients who will benefit most from interventions, identify interventions that can help to halt/reverse disease progression and in effect, reduce the risk of these complications.

Fig. 1: Assessing endothelial function by carotid artery intima media thickness



Endothelial function will be assessed by reactive hyperaemia index: EndoPat

Aortic artery stiffness: Measured as carotid femoral pulse wave velocity

Carotid artery intima media thickness

Contributed by
Asst Prof Rinkoo Dalan
Senior Consultant, Department of Endocrinology
Tan Tock Seng Hospital
Assistant Professor, Lee Kong Chian School of Medicine
Nanyang Technological University

Congratulations to the FY2016 NHG Clinician-Scientist Preparatory Programme (CSPP) Awardees!

The NHG Clinician-Scientist Preparatory Programme (CSPP) was redesigned and renamed from the Clinician Leadership in Research (CLR) Programme in 2015. The CSPP aims to provide clinicians with **an exposure to research in the early phase of their career** through **research training** and **project experience.** Our FY2016 successful applicants share their thoughts on being awarded into the programme:

Dr Ngo Wei Kiong
Resident, Ophthalmology, Tan Tock Seng Hospital
Through structured research-related training, mentorship and networking provided by the CSPP, I see my future as a Clinician-Scientist taking a leading role in collaborative clinical research that will bring direct benefits in the care of our patients in the field of diabetic retinopathy and age-related macular degeneration.

Dr Koh Yun Pei
Medical Officer, Dermatology, National Skin Centre
I hope to further develop my interest in research and jumpstart a career as a Clinician-Scientist through CSPP's mentoring and structured training experience.

Dr Danson Yeo
Resident, General Surgery, Tan Tock Seng Hospital
I'm thankful for the opportunity to be awarded into the CSPP. This is my first time doing translational research and I'm excited to embark on this new journey. I do hope it will open doors to future collaborations with other research institutions.

Dr Kwong Hui Li
Medical Officer, Dermatology, National Skin Centre
I am excited to embark on my journey in developing as a Clinician-Scientist, and hope to eventually focus on drug-delivery systems. I am grateful for the opportunity to be awarded into the CSPP, and I am confident that the experiences and training gained throughout the duration of this programme will serve me well for my future endeavours.

Dr Kee Kok Wai
Family Physician, Family Medicine, National Healthcare Group Polyclinics
As a graduate of the NHG Family Medicine Residency Programme, I learned to think critically and appraise the evidence. I believe research is the key to better clinical and primary care. I am grateful to be given the opportunity under CSPP to embark on research early during my family medicine fellowship training.

The STOP Dengue Research Programme: The Expanding Research Scope from Hospital to Community

In December 2008, Tan Tock Seng Hospital was awarded the STOP Dengue Translational Clinical Research (TCR) grant by the National Medical Research Council. The main aim of STOP Dengue has been to overcome major gaps in the treatment and management of dengue through the translation of its research findings. Although the grant ended in 2015, our dengue research continues to move forward.

Key milestones of the programme include the establishment of the following:

A well-characterised group of dengue patients

- Determined that patients without any dengue warning signs can be managed safely on an outpatient basis
- Identified that individuals with diabetes & hypertension, > 65 years of age and those who delayed clinical consultation had a higher risk of severe dengue

A collaborative network for dengue clinical trials

- Completed an international, multi-centre, investigator-initiated clinical trial to evaluate the safety and efficacy of prophylactic platelet transfusion in adults with uncomplicated dengue
- Completed the first Singapore dengue drug trial

A collaborative network for dengue pathogenesis studies

- Discovered a neutralising dengue serotype 1 monoclonal antibody in partnership with the National University of Singapore (NUS)
- Developed partnerships with NUS, Singapore-MIT Alliance for Research and Technology (SMART), Singapore Polytechnic, Nanyang Technological University and A*STAR in the development of point-of-care testing platforms for diagnosis and prognosis

Other achievements include:

118 publications in top tier journals

21 PhD/MSc students trained

$2.9 million in research grants

Evidence-based dengue admission criteria to reduce dengue hospitalisation from 80-90% (2006) to about 30% (2013)

Future plans

There is a greater need to focus on studies in the community setting. Therefore we aim to:

- Study dengue transmission in the community
- Understand the health-seeking behaviour of dengue patients
- Assess the impact of asymptomatic infections within the community

As infectious diseases respect no boundaries, we also aim to foster strong partnerships with overseas collaborators to establish evidence-based guidance for dengue prevention, control and clinical management. Together, we will reduce the global public health burden due to dengue.

Contributed by
Prof Leo Yee Sin
Director and Senior Consultant
A/Prof David Lye
Senior Consultant
Ms Linda Lee
Assistant Manager
Dr Vincent Pang Junxiong
Senior Research Fellow
Institute of Infectious Diseases and Epidemiology
Tan Tock Seng Hospital

Thailand Ministry of Public Health Visits NHG Research & Development Office

The NHG RDO team with distinguished guests and overseas experts

On 11 May 2016, the NHG Research & Development Office (RDO) hosted a group of 21 delegates from the Thailand Ministry of Public Health. The Thai delegation was led by Dr Suphan Srithamma, Director-General, Department of Medical Services.

RDO and the delegates shared and learnt from each other on the respective governance structure, and how to improve processes and tackle issues related to clinical research. In addition, they discussed about the NHG's AAHRPP-accredited human research protection programme, research training and quality management programmes.

For more information on this event, please click here.

AAHRPP: Association for the Accreditation of Human Research Protection Program

Contributed by
Partnerships & Outreach unit
Office of Human Research Protection Progamme Research & Development Office, National Healthcare Group

Award for Annals, Academy of Medicine Best Publication 2015

Award: Silver Prize

Title of Publication : An analysis of blinding success in a randomised controlled trial of fish oil omega-3 fatty acids

Research Team: Jean CJ Liu, Adrian Raine, Rebecca P Ang, Daniel SS Fung

As a researcher, finding 'no difference' between groups can sometimes make your heart sink. However, in a recent paper for the ANNALS Academy of Medicine Singapore, **we were pleased to report 'no difference' between two arms of our randomised controlled trial:** our participants could not tell which research arm they had been allocated to, and were successfully 'blinded' to the identity of the trial substance.

Although researchers recognise blinding as the hallmark of a successful trial, evidence of blinding success is rarely reported. When blinding fails, this could affect the validity of trial conclusions - particularly when trials involve subjective outcomes, as many psychiatric studies do. **In our case, apart from using subjective measures, our trial substance was also one that was notoriously difficult to blind - omega-3 fatty acids derived from fish oil ('omega 3').** From the outset, grant reviewers had raised questions about the strong odour and fishy taste of omega-3 supplements, suggesting that these were impossible to disguise! Accordingly, we searched for empirical evidence of blinding before drawing conclusions on how omega-3 might affect the outcomes we were interested in (namely, the behaviour of children diagnosed with disruptive behaviour disorders).

To explore blinding efficacy, we administered a 5-item questionnaire asking 131 child participants: to guess which substance they had received (omega-3 vs. placebo), the confidence of their guess, the reason for their guess, whether they noticed any change, and whether they believed anything should change. This was administered within a week of supplement administration, before actual pharmaceutical effects could affect participants' views. To our great relief, we found that participants could not guess which supplement they had eaten. **It did not matter: how confident they were, what reasons they cited for their guess, or any changes they had perceived (or thought they should notice); participants' accuracy was simply no better than chance.** Finally, accuracy did not improve after 6 months of continued supplementation, and parents were likewise in the dark about which arm their child had been allocated.

Taken together, these results suggest that a clinical trial involving omega-3 supplementation need not be 'fishy business'. **Despite the strong odors, our study suggests that the identity of omega-3 can be blinded to participants;** this gives us confidence that subsequent conclusions regarding omega-3 efficacy cannot be attributed merely to placebo effects.

Beyond our study, we have showcased a questionnaire and a series of analytical methods that will allow other researchers to search for evidence of blinding success. **Such an extensive investigation need not be undertaken for every clinical trial, but we do recommend it when** - as with our study - **the outcome measures are subjective and the identity of trial conditions may be difficult to mask.**

Contributed by
Dr Jean Liu
Assistant Professor, Yale-NUS College (Singapore)

Note: Dr Jean Liu was a Research Assistant at the Institute of Mental Health (IMH) when the study was conducted. She has since taken up an academic position with the Yale-NUS College.

Psychology Research in the Transformation of Primary Care

Psychology in primary care has become a growing area of focus during the past few decades. In efforts to enhance accessibility, quality and affordability of care, psychologists in primary care partner and function within inter-disciplinary teams. We attend to patients and their families with mental health and health behaviour problems.

Psychologists in primary care give emphasis to "whole person care". They integrate mental and physical health as an essential approach for the improvement of health, quality of care and patient experience (Butler et al., 2008). Since 2014, established consensus on research competencies of psychologists required for them to work effectively in primary care medical settings have been accepted by the psychology community (McDaniel et. al., 2014).

Our team of clinical psychologists at the National Healthcare Group Polyclinics (NHGP) therefore decided to engage in research and evaluation of services, to boost the quality of care and improve patient outcomes. The team received 3 awards at the Singapore Primary Care Research Scientific Competition 2015. **We are involved in a series of research studies that explore psychological correlates of change expectancy in anxiety, depression and insomnia, and common mental health problems in primary care. We also aim to pilot research protocols on common brief psychological interventions for enhancing treatment adherence in patients with chronic diseases and mental health problems.**

To widen breadth and improve the quality of services delivered to our patients, **our team will evaluate clinical outcomes to determine the optimal number and duration of consults needed for problem types addressed in our clinics of different severity levels. We are excited to pursue these studies that would directly improve our clinical practices, to offer focused and relevant help to meet patients' biopsychosocial needs.** With the changing healthcare landscape and evolving opportunities for psychology within collaborative and comprehensive patient care, NHGP psychologists will lose no time and actively work together with other healthcare professionals to advance mental health research in primary care.

Contributed by
Dr Wong Mei Yin
Principal Clinical Psychologist, Clinical Services
National Healthcare Group Polyclinics

Evaluation of Flexible Nasoendoscope Decontamination

Dr Phua Chu Qin, an FY2013 Clinician Leadership in Research (CLR) Programme (renamed to Clinician-Scientist Preparatory Programme (CSPP)) Awardee, shares on her investigation into the efficacy of flexible nasoendoscope decontamination in the clinical setting under the Programme.

Background of study

Flexible nasoendoscope decontamination has become a subject of increased importance and relevance, especially with regards to patient safety. Over the last decade, flexible nasoendoscope (Fig.1) has become an indispensable tool to Ear Nose and Throat (ENT) surgeons in providing clear visualisation of the nose and throat, hence allowing accurate diagnosis and early treatment. With each use, the flexible nasoendoscope needs to be decontaminated prior to its use on the next patient in order to avoid risk of cross-infection between patients.

In the current literature, there is a lack of information regarding the clinical effectiveness of flexible nasoendoscope decontamination.

Fig.1: Flexible Nasoendoscope

Findings and implications of the results

Using microbiological swabs that were taken sequentially at different time points in the decontamination workflow, our study found that our current clinical practice of Anioxide 1000 is efficacious in the elimination of bacterial growth on flexible nasoendoscopes following their use in clinic patients.

This finding has important implications to our decontamination practice because in recent years, there has been increased movement towards the use of the automated washer in a centralised decontamination unit in order to reduce processing error from human variability. However, this practice imposes extra manpower burden required to transport the scopes to the automated washer, as well as huge costs in purchasing extra scopes to cope with the prolonged washing process and rapid clinic turnover of scope use. **The results from our study demonstrated that 5-minute Anioxide 1000 soak used in the clinic and a non-centralised decontamination setting, is effective in bacterial elimination.** Similarly, there is evidence emerging from other authors in the United States demonstrating that shorter and simpler decontamination process are just as effective as the 30-minute automated washing process.

Benefits of being a CLR Programme Awardee

As a trainee doctor in Otorhinolaryngology, I have benefitted tremendously from the CLR Programme. **One of the distinct advantages of this programme is that it offers research-related courses which have helped build a strong foundation for me to navigate and progress in my research career.** In addition, this programme has provided me with opportunities to meet like-minded individuals to exchange ideas and our experiences in research, as well as open doors for future collaboration.

To find out more, click here.

Contributed by
Dr Phua Chu Qin
Registrar, Department of Otorhinolaryngology
Tan Tock Seng Hospital

General Practitioners' (GP) Knowledge, Attitude and Practices in Antibiotic Prescription for Acute Upper Respiratory Infection

Acute Upper Respiratory Infections (AURI) are leading causes for antibiotic prescription in primary care practice although antibiotics are not indicated most of the time. Antimicrobial stewardship is crucial in controlling the increase of antibiotic resistance.

To implement an effective programme to reduce antibiotic use for AURI in the primary care setting, we conducted an anonymous Knowledge, Attitude and Practices (KAP) survey among general practitioners (GPs) in the primary care setting to understand their prescribing habits. Low prescribers were defined as those who prescribed antibiotics to less than 20% of their patients with AURI. In order to ascertain the latent factors affecting prescribing patterns in primary care, Exploratory Factor Analysis (EFA) was performed.

The results:

351
respondents (82.2%) were from private practice and the remaining were from the public sector.

39.6%
from the private sector deemed themselves low prescribers compared to 80.0% in the public services (p≤0.01).

58.4%
of GPs in the private practice versus 72.4% of those in the public sector recognised that >80% of acute respiratory infections were caused by viruses (p= 0.02).

427
responses were received.

Interestingly, the majority **(82.7%)** thought that antibiotics are over-prescribed in the primary care setting but most (80.0%) also thought that they prescribe antibiotics appropriately.

- Significant factors that influence low prescription were clinical competency (Adjusted odds ratio (aOR): 3 [2.2 - 4.0]), the consultation process (aOR: 2.4 [1.8 - 3.3]) and desire to improve their prescribing habits (aOR:1.3 [1.02 - 1.7]).

This is the first KAP survey on antibiotic prescription for AURI done amongst GPs in Singapore and we have identified:

i) Physician's clinical competency;
ii) Consultation process; and
iii) Desire to improve clinical practice

Were significant factors that contribute to being a low antibiotic prescriber.

Qualitative research and future interventions ought to be directed at addressing these 3 factors to reduce antibiotic prescription.

Contributed by
Dr Lee Tau Hong
Associate Consultant, Department of Infectious Diseases
Mr Joshua Wong
Medical Statistician, Department of Clinical Epidemiology
A/Prof Angela Chow
Head & Senior Consultant, Department of Clinical Epidemiology
Institute of Infectious Diseases and Epidemiology
Tan Tock Seng Hospital

VITAL Lifestyle Skills Program

The Research Support Scheme (RSS) award for the VITAL project has provided a unique opportunity to explore an innovative community-based model of health promotion for well older Singaporeans Similar to the evidence-based Lifestyle Redesign intervention in USA (Clark et al., 1997, 2012), it will be based on the synthesis of applied occupational therapy principles into an educational and supportive lifestyle skills intervention.

The overall aim is to enable community dwelling elderly, modifying their lifestyles to achieve better ageing and health-related outcomes. This is timely given the fast ageing Singaporean society and the need to deliver cost-effective, sustainable ageing programs especially for the lower socio-demographic strata of society. In the initial phase, over 90 elderly people, aged 60 years and above, living at Kampong Glam, Beach Road HDB residences have already participated in several focus groups. VLPS will then be piloted in a later randomised controlled trial (RCT).

The RSS gives a wonderful opportunity to be involved in breakthrough translational clinical research with both local (Saw Swee Hock School of Public Health - National University of Singapore, Singapore Institute of Technology-Occupational Therapy) and overseas (University of Queensland) collaborators. It is hoped that the preliminary findings from VITAL will be positive to launch a local multi-site study at a future date.

Contributed by
Dr Chan Mei Leng
Principal Occupational Therapist
Tan Tock Seng Hospital

A Clinician-Scientist's Quest: Minimising the Morbidity of Head and Neck Cancer Treatment

A cancerous growth in the head and neck region is devastating to most patients. The prospect of surgery, radiation and chemotherapy to this aesthetically and functionally sensitive region is frightening at the least. We are curing many of these patients, but they are paying the cost with their voice, swallowing, hearing, sense of smell or external appearance. For example, many nasopharyngeal carcinoma survivors are living with significant hearing loss or dysphagia. **When patients ask us what can be done, it is frustrating not being able to do much. The desire to answer these questions well gave me the motivation to receive formal training in research.** After my exit exam, I enrolled in the **Master in Clinical Investigation (MCI) course offered by the National University of Singapore.**

Lessons began in August 2015 and my class comprised of nineteen residents and consultant clinicians. In two blocks of six-week studies, we had lively discussions with experts in epidemiology, biomarkers, drug discovery, health system research, clinical trials, ethics, statistics and scientific writing. An overview of the translational research process was formed and my confidence grew in literature appraisal, research methodology and resource management. Plenty of networking existed between the students and the faculty of the course. That opened my eyes to the enormous amount of resources available in Singapore for biomedical research. **Grant application was the highlight of the course. A panel of seasoned clinician-scientists and epidemiologists constructively evaluated my proposal and improved it until it could achieve the high quality worthy of a $20,000 seed funding.** This had been the most valuable lesson and it gave me the confidence in independent research. The funding and the skills acquired in MCI lay the foundation for securing grants at the national level.

Dr Atul Gawande, the insightful American surgeon, wrote, "It is wrong to ask for perfection, but it is right to work towards it". Research gives the clinician the means to approach that perfection. **I hope that one day, head and neck cancer survivors can live as normal a life as they possibly can. Getting trained in research is the first step in this endeavour.**

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07 Nov 2016	Health-Related Quality of Life for Beginners	Tan Tock Seng Hospital (TTSH) CRIO
17 Nov 2016	Intellectual Property Seminar (Basic/Advanced)	NHG Research & Development Office
05 Dec 2016	Advanced Health-Related Quality of Life	Tan Tock Seng Hospital (TTSH) CRIO

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~ TTSH CRIO, please contact Ms Jennifer Teo (Jennifer_hp_teo@ttsh.com.sg)

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