



e-catalyst

ACCELERATING RESEARCH



Clinical Effectiveness and Cost-Savings of Excluding Aspartate Aminotransferase Measurement in Lipid Monitoring Panel among Patients with Type 2 Diabetes



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Hazardous Alcohol Use in a Sample of First Episode Psychosis Patients in Singapore



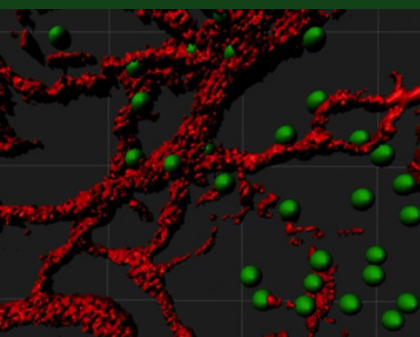
Click [here](#) to view more

NMRC Awards Ceremony



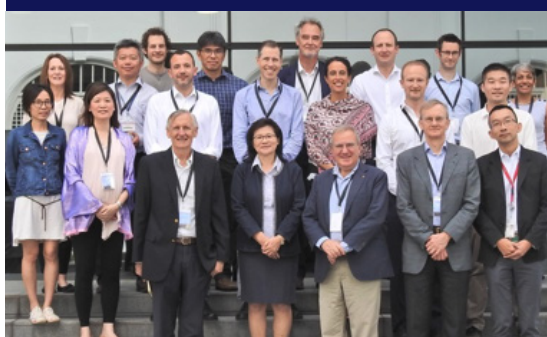
Click [here](#) to view more

Getting Under Eczema's Skin—Tackling Patients' "Itch" Points



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LKCmedicine Hosts Inaugural Joint Symposium on Infection



Click [here](#) to view more

RESEARCH NEWS

- Results for the FY2019 Call for NHG-LKCmedicine Clinician-Scientist Preparatory Programme (CSPP) Applications



- Results for the FY2018 Serious Games Grant Call – gAMES for HeaLth InnoVations cEntre (ALIVE)

RESEARCHER'S FEATURE



- A Medical Student's Perspective on Research in National Skin Centre

RESEARCH EDUCATION

- Research Training Events



- Chicken Soup For The Busy Co-Ordinator

NMRC Awards Ceremony

We are proud to share that the following NHG clinicians had received their National Medical Research Council (NMRC) Human Capital Awards at the NMRC Awards Ceremony held recently on 3 April 2019 at One Farrer Hotel.

Congratulations to all on their well-deserved awards!

Name	NMRC Grant/Award
Assoc Prof Melvin Leow Senior Consultant, Endocrinology, TTSH Associate Professor, LKCMedicine	Clinician Scientist Award (CSA) – Investigator Category
Assoc Prof Angela Chow Senior Consultant, Clinical Epidemiology, TTSH Associate Professor, LKCMedicine	Clinician Scientist Award (CSA) – Investigator Category
Asst Prof Rinkoo Dalan Senior Consultant, Endocrinology, TTSH Assistant Professor, LKCMedicine	Clinician Scientist Award (CSA) – Investigator Category
Asst Prof Jimmy Lee Senior Consultant, IMH Assistant Professor, LKCMedicine	Clinician Scientist Award (CSA) – Investigator Category
Dr Benjamin Lam Chih Chiang Consultant, Family & Community Medicine, KTPH	NMRC Research Training Fellowship (RTF)
Dr Chan Lai Gwen Consultant, Psychological Medicine, TTSH	NMRC Research Training Fellowship (RTF)
Dr Chia Po Ying Associate Consultant, Infectious Diseases, TTSH	NMRC Research Training Fellowship (RTF)
Dr Bryan Tan Senior Resident, Orthopaedic Surgery, TTSH	NMRC Research Training Fellowship (RTF)
Dr Michael Yam Senior Resident, Orthopaedic Surgery, TTSH	NMRC Research Training Fellowship (RTF)
Dr Chew Linghui Justin Associate Consultant, Geriatric Medicine, TTSH	MOH Healthcare Research Scholarship – Master of Clinical Investigation (MCI)
Dr Ho Wei Loong, Sean Associate Consultant, Orthopaedic Surgery, TTSH	MOH Healthcare Research Scholarship – Master of Clinical Investigation (MCI)

To find out more about NMRC Talent Development and Research Grants, please click [here](#).



Attendees and award recipients at the NMRC Award Ceremony

From left : Asst Prof Jimmy Lee, Assoc Prof Angela Chow, Asst Prof Rinkoo Dalan, Prof Leo Yee Sin (Executive Director, NCID), Prof James Best (Dean, LKCMedicine), Prof Lim Tock Han (Dy GCEO, Education & Research, NHG), Dr Benjamin Lam, Dr Michael Yam and Dr Bryan Tan.

Results for the FY2019 Call for NHG-LKCMedicine Clinician-Scientist Preparatory Programme (CSPP) Applications

The NHG-LKCMedicine Clinician-Scientist Preparatory Programme (CSPP) is a joint programme that aims to provide research exposure for clinicians at an early stage of their career, through research training, project experience and mentorship.

The **FY2019 Call for NHG-LKCMedicine CSPP Applications** was open from 03 September – 24 October 2018.

Congratulations to the following FY2019 awardees:

Name	Designation	Institution	Institution
Dr John Ying Jiangbo	Resident	Institute of Mental Health	Knowledge, Attitude and Practice of Psychiatry Residents and Family Medicine Residents Regarding Management of Schizophrenia and Hypertension, Dyslipidemia and/or Diabetes Mellitus
Dr Warren Ong Ming Wu	Resident	National Healthcare Group Polyclinics	Healthcare Cost Attributable to Multimorbidity in Primary Care Setting, and Identification of Key Determinants of Cost
Dr Harumi Ochi	Medical Officer	National Skin Centre	Pathophysiology of Itch in Psoriasis
Dr Kelvin Li Zhenghao	Resident	Tan Tock Seng Hospital	Clinical and Imaging Features of Intermediate Age-Related Macular Degeneration (AMD) and its Correlation with AMD Progression
Dr Kumaran Rasappan	Senior Resident	Tan Tock Seng Hospital	The Optimal Length and Technique for Bridging the Nerve Gap - An Animal Study on Rat Sciatic Nerves

To find out more about CSPP, please click [here](#).

Results for the FY2018 Serious Games Grant Call – gAmes for HeaLth InnoVations cEntre (ALIVE)

In recent years, innovators across the globe have increasingly sought to turn the huge potential of games toward serious causes like healthcare and education. In this vein, the gAmes for HeaLth InnoVations cEntre (ALIVE) – a joint centre established by the National Healthcare Group (NHG) and LKCMedicine – has taken the next step with the establishment of their Serious Games Grant.

The grant seeks the promotion of collaborative research in serious games to improve healthcare in the local and/or Asian population, and welcomes proposals that can demonstrate high potential in improving population health, patient-centric care, healthcare education, productivity, and clinical outcomes.

With this in mind, ALIVE launched its first Call in 2018. Of the 15 submitted applications, 6 were chosen for awards due to outstandingly novel and innovative solutions to existing clinical needs:

NHG PI	LKCMedicine PI	Project
Ms Chloe Chung Lau Ha	A/Prof Nabil Zary	Innovative Delivery Of A Home-Based Rehabilitation For Early Parkinson's Disease – A Feasibility Study Of A Technology Assisted & Digitalised Healthcare Approach
Dr Xie Huiting	Dr Preman Rajalingam	Gamification of Research methodology course for Enhanced Efficacy (GREE)
Mr Yuan Peng	Dr Claire Ann Canning	Using A Gamification Learning Approach To Improve Nurses' Knowledge And Skills In Managing Code Blue Situations
Dr Melvyn Zhang Weibin	Prof Helen Smith	Gamified M-Health Bias Modification Intervention For Substance Use Disorders
Dr Aung Myint Oo @ Ye Jian Guo	A/Prof Nabil Zary	Innovative Mobile-Based Serious Game Application To Improve Technical And Cooperative Skills In Minimally Invasive Surgeries
Dr Yang Su-Yin	A/Prof Nabil Zary	GoActive: Redesigning Rehabilitation And Integration Of Health Behaviours For Chronic Pain Management The Clinic Consult.

For 2019, ALIVE supports grants across two quantum: \$10,000 over 1 year, and \$60,000 over 2 years.

If you have an avid interest in developing serious games to improve healthcare in the local and/or Asian population, you can find out more at ALIVE's website [here](#). Alternatively, you can contact the ALIVE Grant Secretariat [here](#).

Contributed by:
LKCMedicine, NTU Singapore

A Medical Student's Perspective on Research in National Skin Centre

The curriculum of Duke-NUS allows medical students to pursue 9 months of research at an institution of their choice. Having done basic science research, I sought a place where I can learn about clinical research with direct impact to patients.

My opportunity came when I met A/Prof Tey Hong Liang, who is the Head of Research at National Skin Centre (NSC). He offered to mentor me as a Co-Investigator on a new clinical trial from initiation to completion.

His enthusiasm for research inspired me to start before my attachment. Despite his busy schedule, he would always accommodate my school timetable to discuss about the project. Under his mentorship, I learnt how to apply for clinical trial approvals and research grants.

He also patiently guided me through the process of conducting a clinical trial. My project will also be presented at the World Congress of Dermatology in Milan in June 2019.

My stint in NSC was more than my project. Many opportunities enhanced my learning in Dermatology, such as helping in NSC Update 2018 – an international biennial conference organized by NSC, and other projects where cutting-edge imaging technology are used to analyze skin structures without the need for a skin biopsy.

My clinic attachments gave me the chance to see first-hand how clinical research translated into direct benefits to the patients. Their stories of less pain and more convenience bore testament to the success of A/Prof Tey's research in dissolvable microneedles for keloid

treatment. (see Catalyst Issue 36 – Jan 2019)

My project thrived with extensive support from the doctors, administrative staff, research coordinators, pharmacists and biostatistician. I felt privileged to be part of a close-knit community in NSC, who were always responsive and willing to go the extra mile.

Thank you, my friends at NSC for a great research year!



Contributed by:
Mr Lim Gim Hui
Medical Student
Duke-NUS Medical School

GOOD TO READ!

Mapping the Positive and Negative Syndrome Scale scores to EQ-5D-5L and SF-6D utility scores in patients with schizophrenia

Generic preference-based measures, such as the EQ-5D and the SF-6D are commonly used to estimate quality-adjusted life years for cost-utility analyses. In patients with schizophrenia, however, these measures are not used as often as clinical instruments such as the Positive and Negative Syndrome Scale. In the absence of generic preference-based measures, mapping is a useful method to obtain utility scores from clinical instruments for cost-utility analyses. Click [here](#) to read how the mapping algorithm was developed!

Clinical Effectiveness and Cost-Savings of Excluding Aspartate Aminotransferase Measurement in Lipid Monitoring Panel among Patients with Type 2 Diabetes

Statins, are potent cholesterol-lowering drugs with beneficial effects on both primary and secondary prevention of cardiovascular disease. They are generally well-tolerated with rare liver side effects, shown by raised liver enzymes. Ministry of Health Clinical Practice Guidelines on Lipids recommend that when using statins, it is important to monitor liver enzymes. Elevation in the levels of liver aminotransferase (AST) is available for clinicians to order as part of statin therapy monitoring.

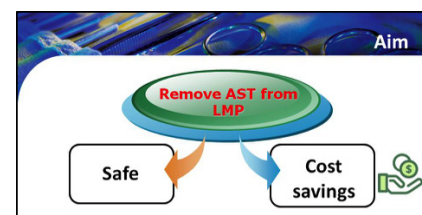
At Yishun Health Campus, the Lipid monitoring panel, which originally consisted of total cholesterol, HDL-c, measured LDL-c, triglyceride, alanine aminotransferase (ALT) and aspartate aminotransferase (AST) is available for clinicians to order as part of statin therapy monitoring.

In our cohort of 2,057 patients, ALT and AST

have a good agreement (99.5-99.7%) and correlation (0.78-0.80) of over a 3-year follow-up period. A total of 6 patients across 3 years, had at least one AST reading of more than 3 times ULN, which would have been missed if only ALT was measured. Five of them had an elevated parallel ALT of more than 2 times ULN, with normal levels at other timepoints. One individual was found to have decompensated liver cirrhosis, which did not arise from use of statins. **If AST was removed from the lipid panel, there would be about \$17,000 of direct cost savings per year in Diabetes Centre (Admiralty Medical Centre) for all patients.**

Exclusion of AST from the Lipid monitoring panel is safe for patients in this cohort, does not adversely impact clinical decision on statin monitoring and allows substantial cost-savings for patients in a clinic setting. A good patient's clinical history and alcohol use would prompt AST ordering, if necessary. Cost savings are

expected to be long term since statin treatment protocols require annual screening.



Aims of study



From left to right:
Dr Sharon Pek, A/Prof Tavintharan,
A/Prof Wong Moh Sim & Mr Eric Sia

Contributed by:

Dr Sharon Pek, Principal Research Officer, Clinical Research Unit, KTPH

A/Prof Tavintharan Subramaniam, Director, Diabetes Centre, Admiralty Medical Centre

A/Prof Wong Moh Sim, Deputy Chairman, Medical Board, Head and Senior Consultant, Department of Laboratory Medicine, KTPH

Mr Eric Sia, Operations, KTPH

On behalf of Singapore study of Macro-angiopathy and micro-vascular Reactivity in Type 2 Diabetes (SMART2D) investigators

Getting Under Eczema's Skin—Tackling Patients' "Itch" Points

Eczema is a common skin disease in Singapore. Patients have a poor quality of life because of itch, yet we know so little about it. It is known that chemicals such as interleukin-31 induce itch in eczema and itch sensation originates from skin nerve endings. **However, the missing link is how these chemicals interact with nerves endings in the skin to cause itch.** Therefore, we collected skin samples from eczema patients and transformed them into transparent tissues, highlighted the chemicals and nerves to create a 3-dimensional image. This enables us to study the spatial relationship between the nerve fibres and the chemicals.

Our study was made possible by NHG-LKCMedicine Clinician-Scientist Preparatory Programme (CSPP). It is an integral part of my Dermatology Seamless Residency research year training, during which I am accorded 50% of my time to do research.

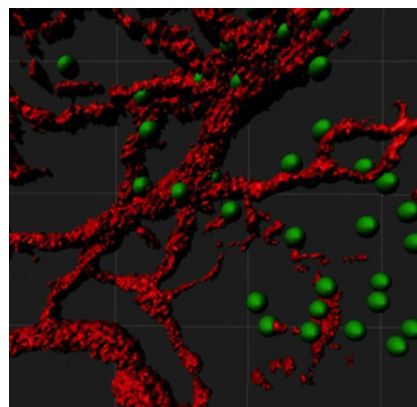
I benefitted from the rigorous coursework and generous mentorship of A/Prof Tey Hong Liang, Head of Research in National Skin Centre (NSC), and Dr Ng Lai Guan, Principal Investigator

in A*STAR. Working with Dr Tan Yingrou, a research fellow in Dr Ng's laboratory, I was exposed to skillsets, such as, immunofluorescence staining, confocal imaging and image analysis, that I never would have envisioned to explore as a clinician.

The learning journey is more important than the destination. While any research is wrought by setbacks, any result or little knowledge gained is ever so precious. Because of this project, I was fortunate to be selected as a Finalist of the Singapore Young Investigator Award in Singapore Health and Biomedical Congress 2018 and an Oral Presenter at the World Congress of Dermatology 2019, a quadrennial event, in Milan, Italy. **CSPP has been both an eye opener and door opener for me. Moving forward, I hope to secure bigger funding and tackle more pain points of our patients through research.**



Contributed by:
Dr Cao Taige
Senior Resident
Dermatology
NSC



Eczema patient's skin is imaged in a 3-dimensional fashion to illustrate the spatial relationship between itch mediator IL-31 (green) and nerve fibres (red).

DID YOU KNOW?

An Effective Proboscis

Do you know how mosquitoes use six needles to suck your blood?

Click [here](#) to read more!

Hazardous Alcohol Use in a Sample of First Episode Psychosis Patients in Singapore

'Hazardous drinking' or 'hazardous alcohol use', is defined as "a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others". **Past research has indicated that people with schizophrenia are more likely to have alcohol problems than the general population.** Combined with the knowledge that alcohol use disorders may further worsen the symptoms of schizophrenia, it is important to investigate the use of alcohol among people with schizophrenia and related psychoses. First Episode Psychosis (FEP) in particular seems to be a crucial juncture of the illness as past research has indicated that interventions soon after onset is associated with better recovery.

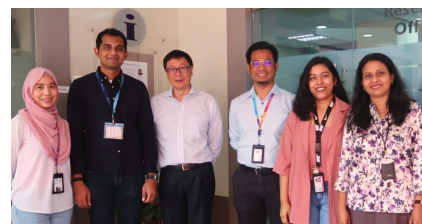
In 2013, a team of researchers from Institute of Mental Health (IMH) Research Division together with the help of the Department of Early Psychosis Intervention set out to investigate the prevalence of hazardous alcohol use among patients with FEP. Participants were between ages 15-40, seeking outpatient treatment from the Department of Early Psychosis Intervention. Participants completed a self-reported survey questionnaire that

included questions on alcohol use, lifestyle behaviours and quality of life.

Findings from our study showed that the prevalence of 12-month hazardous alcohol use was 12.9% (36 out of 280 participants reported hazardous alcohol use). Consistent with past literature, this is higher than reported in a previous study in Singapore which found the prevalence of hazardous alcohol use among patients in a general hospital in Singapore to be 2.8%. It has been hypothesised that people with schizophrenia and related psychosis might use alcohol to regulate their distressing emotions that comes with the illness. Hazardous alcohol use in the current study was also found to be associated with current smokers, compared to those who had never smoked. Hazardous alcohol use was found to be significantly associated with lower scores on the physical health, social relationship and environment domains of quality of life.

The significant impact of hazardous alcohol use on the quality of life is a cause for concern. Incorporating early screening and interventions with regular clinical services could

benefit patients with hazardous alcohol use and comorbid psychosis from developing poor health outcomes. The association with smoking in this study also suggests that future screening questionnaires and interventions should target both smoking and alcohol use behaviours together.



*Team members (from left to right):
Shazana Shahwan, Laxman Cetty,
Prof Chong Siow Ann, Dr Edimansyah Abdin,
Fiona Devi, A/Prof Mythily Subramaniam*

Contributed by:
Mr Laxman Cetty
Research Assistant
Research Division
IMH



*Chairs and Speakers of the
Inaugural Joint Symposium on Infection*

LKCMedicine Hosts Inaugural Joint Symposium on Infection

More than 100 clinicians, researchers and academicians attended the inaugural Joint Symposium on Infection co-organised by LKCMedicine, Imperial College London and the National Centre for Infectious Diseases (NCID). The symposium covered the latest trends and developments in antimicrobial resistance and epidemiology, bacteriology, virology, rapid diagnostics, parasitology and human immunodeficiency virus and tuberculosis.

LKCMedicine Dean Prof James Best kicked off the event by highlighting the instrumentality of research advances to LKCMedicine and developing complementary expertise in infectious diseases. Prof Leo Yee-Sin emphasised on the NCID's national mission to enhance Singapore's ability to respond, manage and prevent infectious diseases. Prof Charles Bangham, Chair of Immunology at Imperial College London shared on the four key sections of Imperial's Division of Infectious Diseases. Click [here](#) to find out more.

Training Calendar

Date	Training Courses	Course Provider
Monthly	Good Clinical Practice (Online)	NHG RDO
	(PCR100) Study Start-Up: Budgeting, Case Report Form Design and Database Design*	
	(PCR200) Study Conduct I: Subject Recruitment and Informed Consent*	
	(PCR300) Study Conduct II : Documentation, Safety Reporting and Investigational Products*	
	(PCR400) Monitoring, Audits and Inspections*	
10 Jul 19	Grant Writing & Management	TTSH CRIO
10 Jul 19	Endnote X7 Workshop	
23 Jul 19	Understanding Study Design	
26 Jul 19	Working with Excel the Smart Way	

CHICKEN SOUP FOR THE BUSY CO-ORDINATOR

Education to facilitate high standards of research conduct

1. Jan 2019: Management of Incidental Findings – Per HBRA Requirement

2. Feb 2019: Subject's Withdrawal from Research – How Should Biological Samples and/or Data Be Managed

3. Mar 2019: Managing Conflict of Interest

Click on the respective points to find out more!

*Blended learning courses involving Online Lectures coupled with a Classroom Workshop on a stipulated date.

Dates are subject to changes without prior notice.

For registration and full details on courses by:

~ NHG Research & Development Office (RDO), please visit www.research.nhg.com.sg
(Training & Education → Register for Courses and Other Events)

~ TTSH CRIO, please contact Ms Siti Aisha Binte Jaffar Siti_Aisha_JAFFAR@ttsh.com.sg

NHG Research Awards 2019

Award Categories

Outstanding Research Impact

Outstanding Research Mentor

Outstanding Research Culture

Research plays an integral part in improving patient care and health outcomes, by providing insights into health, diseases, treatment interventions and outcomes.

The inaugural NHG Research Awards 2019 aims to recognise impactful research, outstanding research mentors as well as departments who have played a significant role in fostering research.

The awards are open to all institutions and national centres under the National Healthcare Group.

Application Period: 21 May 2019 to 28 June 2019 (6 weeks)

Please click [here](#) for more information on the Awards and to download the nomination package.