

EASTERN HEALTH ALLIANCE SCIENTIFIC MEETING 2016

Transitions of Care

10-12 NOVEMBER



EASTERN HEALTH ALLIANCE

Foundation Partners



Changi General Hospital

is Singapore's first purpose-built general hospital, serving a population of 1.4 million residents living in the east. It operates with more than 1000 beds and offers a comprehensive range of medical specialties and services. CGH's vision is to be a caring hospital trusted by patients and staff, renowned for clinical excellence and innovation.



St. Andrew's Community Hospital

provides rehabilitative and sub-acute inpatient care for adults and children after their treatment at acute care hospitals. SACH seeks to promote recovery and help patients regain daily living functions before they are discharged back into the community.



SingHealth Polyclinics

is a leader in Family Medicine, provides seamless, patient-centred preventive healthcare that is affordable and accessible. It comprises a network of nine polyclinics which provide primary healthcare services to the community and plays an integral role in promoting a healthy lifestyle within the community.



Health Promotion Board

aims to empower Singaporeans to attain optimal health, increase their quality and years of healthy life and prevent illness, disability and premature death through their health promotion and disease prevention programmes.



The Salvation Army Peacehaven

Nursing Home is a 401-bed facility with a full range of services aimed at providing compassionate, personalised and holistic care to all patients without discrimination. It is run by The Salvation Army, an international Christian movement.



**EASTERN
HEALTH
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The contents have been compiled from information supplied by exhibitors and faculty. While every effort has been made to ensure that the contents are correct, the Organiser and their representatives are unable to accept any responsibilities and liability for the errors or omissions that may occur.

Welcome Message from the Organising Chairman



Dr How Choon How

Chairman, Eastern Health Alliance Scientific Meeting 2016
Head, Care and Health Integration, Changi General Hospital

Dear friends and colleagues,

The annual Eastern Health Alliance Scientific Meeting (EHASM) has steadily expanded and honed its focus and content since its inception six years ago. Today, it is a significant event in Singapore, bringing together professionals from the eastern healthcare community to enhance professional knowledge, gain new insights and exchange expertise.

The theme of this year's scientific meeting is 'Transitions of Care'. It reflects the increasing priority to better integrate patient care, not only within the acute hospital, but also across primary, intermediate and long-term care settings. Five tracks have been organised for the EHASM 2016: Innovation; Community Palliative and Mental Health; Integrated Care; Redesigning Care Processes; and Healthcare Education. In the last track, we will look at building our capacity for clinical and scientific excellence.

In keeping with the theme, we have collaborated with Eastern Health Alliance partners to hold an additional programme off-site at The Salvation Army Peacehaven Nursing Home and St Andrew's Community Hospital. Participants can look forward to an informative session on a patient's journey from hospital to home and an opportunity to learn about our partners' intermediate and longer term care models.

In addition, the Oral Paper and Poster Competitions will provide an excellent platform for our healthcare colleagues to present their latest research findings, which we will hear about at the meeting.

It gives me great pleasure to welcome you to the EHASM 2016. I hope you will avail yourselves of the opportunity to explore, network and learn together as we collaborate to provide an increasingly seamless, quality care experience for our patients and their caregivers. I look forward to your participation.

Thank you.



Organising Committee

CHAIRMAN

Dr How Choon How, Head and Consultant, Care and Health Integration,
Changi General Hospital

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Dr Andrew Kwek, Senior Consultant, Gastroenterology and Hepatology,
Changi General Hospital

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The Salvation Army Peacehaven Nursing Home

Dr Edward Goh Teck Kheng, Consultant, Medical Services,
St Andrew's Community Hospital

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Changi General Hospital

Dr Tiah Ling, Senior Consultant, Accident and Emergency,
Changi General Hospital

A/Prof Mohan Tiruchittampalam, Senior Consultant, Accident and Emergency,
Changi General Hospital

TRACK LEADS

SNC Cao Yan, Senior Nurse Clinician, Case Management, Changi General Hospital

APN Gan Peiying, Advanced Practice Nurse, Nursing, Changi General Hospital

Prof Goh Siang Hiong, Director, Medical Education, Changi General Hospital

Dr Tan Chee Wei, Service Registrar, Care and Health Integration, Changi General Hospital

Ms Lydia Tan, Deputy Director, Innovation, Eastern Health Alliance

COMMITTEE MEMBERS

Ms Yvonne Chan, Executive, Care and Health Integration, Changi General Hospital

Ms Chong Lu Lu, Assistant manager, Medical Education, Changi General Hospital

NC Norasyikin Hassan, Nurse Clinician, Nursing Education and Research,
Changi General Hospital

Ms Ooh Yi Hui, Executive, Corporate Affairs, Changi General Hospital

Corporate Affairs, Changi General Hospital

Scientific Committee

CHAIRMAN

Dr Christopher Chang Ngai Kin, Consultant, Care and Health Integration,
Changi General Hospital

COMMITTEE MEMBERS

Ms Corina Heng, Head and Manager, Medical Education, Changi General Hospital

A/Prof Tay Yong Kwang, Senior Consultant, Dermatology, Changi General Hospital

Clinical Trials and Research Unit, Changi General Hospital

Speakers' Profile



ANG Peck Har

Associate Consultant, Accident and Emergency, Changi General Hospital

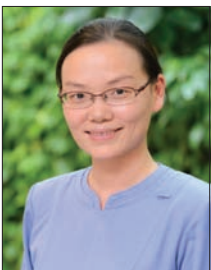
Dr Ang Peck Har is an Associate Consultant Emergency Physician in the Accident and Emergency Department, Changi General Hospital. She was first involved in the transport of the critically ill as a House Officer and has been constantly surprised by these patients. After a few years, and many ambulance and lift rides later, she hopes to share her experiences and lessons learnt with others doing the same work.



ANG Seng Bin

Head and Consultant Family Physician, Family Medicine Service and Menopause Unit, KK Women's and Children's Hospital

Dr Ang Seng Bin is a Consultant Family Physician and the Head of the Family Medicine Service and Menopause Unit, KK Women's and Children's Hospital. Dr Ang has been active in undergraduate and postgraduate teaching, and has several teaching appointments, which include: Associate Programme Director of the SingHealth Family Medicine Residency Programme; Faculty Member of the Fellowship Programme of the College of Family Physicians Singapore; Physician Faculty Member of the SingHealth Obstetrics and Gynaecology (O&G) Residency Programme; and Adjunct Assistant Professor in the O&G, Paediatric and Family Medicine Clerkship of Duke-NUS Medical School. He currently leads the Match-A-Nurse Programme, which was launched in April 2016 by the SingHealth Regional Healthcare System.



CAO Yan

Senior Nurse Clinician, Case Management, Changi General Hospital

Senior Nurse Clinician Cao Yan has 18 years of nursing experience in the medical, surgical and cardiology wards, and case management experience since 2009. As the Team Lead, she currently heads the cardiac case management team in caring for patients post acute myocardial infarction and heart failure. She is also an appointed member of the ValuedCare Heart Failure Programme team in Changi General Hospital, which aims to deliver quality care for patients with heart failure. She was awarded the prestigious Nurses' Merit Award 2015 from the Ministry of Health for her outstanding contribution and dedication to the nursing profession. Besides her clinical roles, she participates actively in nursing research activities. She has been appointed as a Track Lead for the Eastern Health Alliance Scientific Meeting 2016.

**Nicholas CHEW Wuen Ming**

*Group Chief Education Officer, Group Education and Designated Institutional Official,
NHG-AHPL Residency Programme, National Healthcare Group*

Adj A/Prof Nicholas Chew is a Senior Consultant Psychiatrist at Tan Tock Seng Hospital. He graduated from the Faculty of Medicine, National University of Singapore (NUS) in 1995, and holds a Master of Medicine in Psychiatry (NUS, 2001) and a Master of Science in Health Professions Education from Massachusetts General Hospital Institute of Health Professions, MA, USA (2013). He served as the Deputy Head of the Department of Psychological Medicine, Tan Tock Seng Hospital, from 2006 to 2010, where he started the HIV Psychiatry and Post-Stroke Depression Programmes. In 2009, he started the Transitional Year Residency Programme in the National Healthcare Group (NHG) and subsequently took on the role of the Designated Institutional Official for the institution's NHG-AHPL Residency Programme. In 2013, he also served as the Assistant Chairman of the Medical Board (Medical Manpower Development), NHG. He currently serves as the Group Chief Education Officer for NHG and is a member of the Specialist Accreditation Board in Singapore.

**CHIN Woon Hsi**

Manager, ValuedCare Programme, Changi General Hospital

Mr Chin Woon Hsi joined Changi General Hospital (CGH) in September 2015 and is currently the Programme Facilitator for the ValuedCare (VC) Heart Failure Programme. He works closely alongside Dr Gerard Leong and the VC Heart Failure Programme members on their transformative journey from a volume-based to a value-based healthcare delivery model. The team aims to improve clinical outcomes and reduce system costs through integrated care delivery for heart failure patients using evidence- and consensus-based best practices. After his 18-month assignment with the Economic Development Board, Germany, he returned as the pioneer member of a Singapore biotechnology firm, which was later acquired by a French/Italian multinational corporation. Prior to joining CGH, Woon Hsi led a team in the Nursing Administration Department, National University Hospital, Singapore, for three years. Woon Hsi's background spans the fields of entrepreneurship, biological sciences and business administration. He received a bachelor's degree in Molecular Cell Biology from the University of York, UK, and a Master of Business Administration from the University of Manchester, UK.

**Terry CHING**

Graduate, Singapore University of Technology and Design

Mr Terry Ching received his Bachelor of Engineering in Product Development (Mechanical track) from Singapore University of Technology and Design in 2016. With a passion for using technology and design to improve healthcare delivery in Singapore, he started immersing in healthcare and biomedical research since his first year in university. His earlier healthcare development includes a novel 'Wearable Patient-Return Electrode' and an 'Early Blood-Detection Device'. His more recent developments at Changi General Hospital, a 'Simulated Lung Model' and a 'Pleural Drainage Device', were well received by the senior management at Eastern Health Alliance. Patents were filed and plans to eventually commercialise these products are in progress. He enjoys working with clinicians to solve real-life problems as it gives him a sense of purpose and meaning. In his free time, Terry loves running, and playing soccer and table tennis as they keep him fit and healthy.

**CHOW Mun Hong***Director, Innovation and Quality Management, SingHealth*

Dr Chow Mun Hong is the Director of Innovation and Quality Management at SingHealth, the largest public sector healthcare cluster in Singapore. He focuses on strengthening the quality management system, building capability and capacity for innovation and improvement, and supporting efforts to transform care delivery. Dr Chow is also the Director of Quality Management at SingHealth Polyclinics, the primary care arm of SingHealth, where he started the Quality Management Department and has been overseeing quality and safety for more than ten years. His areas of responsibility include clinical governance, quality assurance, patient safety, patient experience, quality improvement, and learning in quality and safety. He is also the Institutional Risk Officer of SingHealth Polyclinics where he oversees the Enterprise Risk Management Programme. Dr Chow is a family physician by training and is a Senior Consultant at SingHealth Polyclinics. He graduated with an MBBS in 1990, attained his Master of Medicine (MMed) (Family Medicine) in 1998, FCFP(S) in 2002 and Master of Business Administration in 2013. He also completed a fellowship in Integrated Chronic Disease Management at Kaiser Permanente in 2004. His interests are in continual improvement, healthcare quality and safety, and care delivery design to support population care. He has also been active in medical and interprofessional education for many years, is an Adjunct Assistant Professor at Duke-NUS Medical School, and an MMed (Family Medicine) trainer and examiner. He is also involved in quality and safety training for residents and other healthcare professionals, and contributes on a national platform where he co-chairs the National Curriculum Workgroup for Patient Safety and Quality Improvement at the Singapore Healthcare Improvement Network.

**CHOW Wai Leng***Deputy Director, Health Services Research, Eastern Health Alliance*

Dr Chow Wai Leng is a family physician by training and an experienced health services researcher who heads the Health Services Research Department, Eastern Health Alliance (EHA). Dr Chow has been extensively involved in performing programme evaluations for many of the programmes in Changi General Hospital and EHA, and translating the evaluation findings to improve the programmes. She has also published widely as lead and co-author in peer-reviewed scientific journals and conferences. Her research interest includes prevention and management of diabetes mellitus, and applying analytics in the real-world setting to improve the delivery of healthcare.

**Clayton CHUA***Physiotherapist, The Salvation Army Peacehaven Nursing Home*

Mr Clayton Chua is a physiotherapist and has been with The Salvation Army Peacehaven Nursing Home for 2.5 years. His work involves assessing, rehabilitating and achieving quality of life for the residents.

**FOCK Kwong Ming**

*Assistant Group Chief Executive Officer (Integrated Care) and Chief Risk Officer, Eastern Health Alliance
Senior Consultant, Gastroenterology and Hepatology, Changi General Hospital*

Prof Fock Kwong Ming is the Assistant Group Chief Executive Officer (Integrated Care) and Chief Risk Officer of the Eastern Health Alliance. He is currently a Senior Consultant Gastroenterologist at Changi General Hospital (CGH) and has held previous appointments at the hospital including Head of Gastroenterology, Chief of Medicine and Chairman of the Medical Board. He is also a past Master of the Academy of Medicine, Singapore. Prof Fock serves as a Clinical Professor at National University of Singapore and is an Adjunct Professor at Duke-NUS Medical School. He was also a Visiting Professor at University of Utah, UT, USA, in 2003 and University of Arizona, AZ, USA, in 2007. Prof Fock has published more than 160 papers, and is the past President and current Board Member of the Asian Pacific Digestive Week Federation.

**Edward GOH Teck Kheng**

Consultant, Medical Services, St Andrew's Community Hospital

Dr Edward Goh Teck Kheng graduated from National University of Singapore in 1999. He started working at St Andrew's Community Hospital (SACH) after obtaining his Master of Medicine (Family Medicine) in 2009. In 2010, he obtained a Postgraduate Diploma in Geriatric Medicine. Dr Goh is a registered family physician and a Consultant at SACH. He is also a member of the ValuedCare Hip Fracture Pathway Programme, a collaboration between Changi General Hospital (CGH) and SACH, aimed at improving the transition of care and post-acute rehabilitation of elderly patients transferred from CGH to SACH post hip fracture.

**GOH Kiat Sern**

Consultant, Geriatric Medicine, Changi General Hospital

Dr Goh Kiat Sern is a consultant geriatrician with a special interest in orthogeriatrics, osteoporosis and falls in the elderly. He is a co-clinical champion for the Eastern Health Alliance ValuedCare Hip Fracture Programme, and leads the team in the implementation of best practices and quality improvement. He runs the hospital's Fall Assessment Clinic and has a keen interest in research. He is also committed to medical education, exemplified in his roles as Associate Programme Director of the SingHealth Geriatric Medicine Senior Residency Programme and Clinical Preceptor of the Advanced Practice Nurse Training Programme.

**GOH Siang Hiong**

Director, Medical Education, Changi General Hospital
Senior Consultant, Accident and Emergency, Changi General Hospital

Prof Goh Siang Hiong is a Senior Consultant Emergency Medicine (EM) Specialist and currently the Director of Medical Education at Changi General Hospital. He has a deep interest in EM medical education and is presently an instructor for BCLS, ACLS, ATLS (provider and instructor courses), HazMat Life Support and Fundamental Critical Care courses. His passion for medical education led him to be awarded Best Teacher for Ambulatory Disciplines and the SingHealth GCEO Excellence Award for Medical Education. Prof Goh also has an interest in medical informatics. He is currently the President of both the College of Emergency Physicians, Academy of Medicine, Singapore, and the Society for Emergency Medicine in Singapore.

**Rahul GOSWAMI**

Consultant, Accident and Emergency, Changi General Hospital

Adj A/Prof Rahul Goswami is an emergency physician residing in Singapore. He is a Fellow of both the Australasian College for Emergency Medicine and Academy of Medicine, Singapore. He holds a Master in Disaster Medicine and PGCert in Aeromedical Retrieval and Transport. He is also a Faculty Member of the Singapore Accreditation Council of Graduate Medical Education Programme for trainees in emergency medicine and is an Adjunct Assistant Professor at Yong Loo Lin School of Medicine, National University of Singapore. He is a former Royal Flying Doctor Service member and is fortunate to have worked in three continents. Currently, he works in a 450-patient-per-day emergency department and sometimes retrieves critical patients from Southeast Asia. He also runs two medical education portals including emergence phenomena.

**Syahid HASSAN**

Senior Human Factors Specialist, Office of Improvement Science, Changi General Hospital

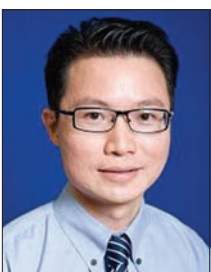
Dr Syahid Hassan is a Senior Specialist in the Office of Improvement Science, Changi General Hospital. He specialises in human factors, and partners with the hospital's improvement teams to make processes more user-friendly and error-resistant. He also works on initiatives to build up the culture of patient safety in the hospital. He holds a PhD in Human Factors Engineering and a bachelor's degree in mechanical engineering (design specialisation) from Nanyang Technological University, Singapore. His key interests in human factors include human information processing, decision-making, human error and human-automation interaction.

**Anuradha KALIAPPAN***Senior Medical Social Worker, Medical Social Services, Changi General Hospital*

Ms Anuradha Kaliappan is a senior medical social worker with ten years of experience working with older persons, especially those with mental health issues. After graduating with a Bachelor of Psychology Counselling from Universiti Malaysia Sabah, Malaysia, Anuradha went on to pursue her Graduate Diploma in Social Work at UniSIM, Singapore. Anuradha's main portfolio includes working closely with geriatric patients and their family members to address their psychosocial needs. As a member of the Changi General Hospital (CGH) Community Psychogeriatric Programme Team, Anuradha provides training and consultancy services to the eldercare community service providers in the eastern region of Singapore. Anuradha is certified in Advanced Certificate in Training and Assessment, Dementia Care Mapping and Mental Health First Aid in Older Persons. Anuradha is also a recipient of the CGH 2013 Single Award Winner.

**Gary KANG***Family Physician and Deputy Clinic Director, SingHealth Polyclinics – Sengkang*

Dr Gary Kang graduated from the School of Medicine, National University of Singapore in 2006 and attained his Master of Medicine (Family Medicine) in 2013. As the Deputy Clinic Director of Sengkang Polyclinic, he understands the complex interplay of processes that keep big government clinics running while ensuring patient safety as well as delivering excellent healthcare. He is also a member of the SingHealth Polyclinics Cardiovascular Diseases Workgroup, which undertakes the task of constantly looking into improving every aspect of care for patients suffering from cardiovascular-related ailments.

**KOH Lip Hoe***Head and Consultant, Geriatric Medicine, Changi General Hospital*

Dr Koh Lip Hoe is a Consultant Geriatrician and Palliative Care Physician at Changi General Hospital. He graduated from National University of Singapore in 1999 and obtained his Membership of the Royal College of Physicians (UK) in 2006. He received his training in geriatric medicine and palliative medicine in Singapore, but was also attached to various centres in the UK (London, Cambridge and Dundee) for his training in palliative medicine. Dr Koh currently heads the Departments of Geriatric Medicine and Palliative Care Service, Changi General Hospital.

**Joshua LAU Teh Yee***Family Physician, Metta Hospice Care*

Dr Joshua Lau has been practising as a family physician in the community for more than 12 years and works as a partner in a busy clinic practice, which attends to patients of a spectrum of ages. He has worked with various nursing homes for more than a decade, and is currently Resident Physician of nursing homes such as The Salvation Army Peacehaven Nursing Home, Lions Home for the Elders and Moral Home for the Aged Sick. For the past eight years, he has been working with Metta Hospice Care to provide palliative care for patients in their homes and has made approximately 7,000 house calls. His pursuit to be a well-rounded family physician led him to complete postgraduate training in family, geriatric, dermatology and palliative medicine. He enjoys inculcating in medical students the joys of family medicine practice and is an Adjunct Lecturer at the Yong Loo Lin School of Medicine, National University of Singapore.

**LAU Sie Leng***Lecturer, School of Health Sciences (Nursing), Nanyang Polytechnic*

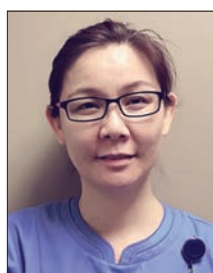
Ms Lau Sie Leng is a Nursing Lecturer at the School of Health Sciences (Nursing), Nanyang Polytechnic. She received her Bachelor of Health Sciences, Nursing and Midwifery from the University of Sydney (Singapore Institute of Management, Singapore) and Master of Clinical Research from the School of Nursing, Midwifery and Social Work, the University of Manchester, UK. Her portfolio includes giving lectures to nursing students, coordinating the Advanced Diploma in Nursing (Medical-Surgical) Course and supervising students during their clinical attachment at the various healthcare institutions in Singapore. She currently leads the curriculum review for the Advanced Diploma in Nursing (Medical-Surgical) Course, which is targeted for implementation in October 2017. She also conducts and coordinates educational programmes in General and Medical-Surgical Nursing for international participants.

**Anna LEE Suan Cheow***Manager and Principal Occupational Therapist, St Andrew's Community Hospital*

Ms Anna Lee graduated from the University of Sydney, Australia, in 1993 with a Bachelor of Applied Science (Occupational Therapy). After graduation, Anna worked at Singapore General Hospital, MINDS, Bright Vision Hospital and Ren Ci Hospital, before joining St Andrew's Community Hospital (SACH) in 2005. An advocate of better care delivery for patients, Anna played a key role in developing the Centre for Independent Living at the Integrated Building, a Changi General Hospital-SACH facility. In 2015, her team's Quality Improvement (QI) project, "Enhance Care Delivery on Activities of Daily Living by OTs for Patients Undergoing Rehabilitation in a Community Hospital in Singapore" won the Good Suggestion and Good Practice Award at the Intermediate and Long-Term Care Quality Festival organised by the Agency for Integrated Care, Singapore. Another QI project, "Enhance the Well-Being of Patients in a New Dementia Care Ward in SACH" by her team was also accepted for presentation at the National Occupational Therapy Conference 2014 in Singapore.

**LEE Chai Hoon***Senior Pharmacist, Pharmacy, Changi General Hospital*

Ms Lee Chai Hoon graduated from the Faculty of Pharmacy, National University of Singapore, and has worked in both the outpatient and inpatient settings of the Pharmacy Department, Changi General Hospital. She has run ambulatory clinics, such as anticoagulation clinic and heart failure clinic, and has taken charge of pharmacy services, such as the Medication Therapy Management and Pharmacist Outreach Programme. Currently, she is based in the hospital wards to provide medication reviews for hospitalised patients. She also played an active role in the care of heart failure patients under the Geisinger's heart failure pathway.

**LEE Yian Chin***Nurse Clinician, Case Management, Changi General Hospital*

Nurse Clinician Lee Yian Chin has 29 years of nursing experience in the surgical ward, and orthopaedic, neurology and emergency theatres, and case management experience since 2011. As the Team Lead, she currently heads the orthopaedic case management team in the caring of patients post knee arthroplasty, hip fracture, and sports and shoulder injuries. She was appointed a member of the ValuedCare Hip Fracture Programme at Changi General Hospital, which aims to deliver holistic care for elderly patients with hip fractures. Besides her clinical roles, she participates actively in nursing research activities. She was the Co-Lead of the Orthopaedic Track of the Eastern Health Alliance Scientific Meeting 2015. She was awarded the prestigious Nurses' Merit Award 2016 from the Ministry of Health for her outstanding contribution and dedication to the nursing profession.

**Kui Toh Gerard LEONG***Senior Consultant, Cardiology, Changi General Hospital*

Dr Gerard Leong is a specialist in cardiology, subspecialising in advanced heart failure, and transplant cardiology and echocardiography imaging. He is a Senior Consultant in the Department of Cardiology, Changi General Hospital (CGH) and the Director of the CGH Heart Failure Programme since its inception in 2006. He graduated from National University of Singapore in 1994 and obtained his Specialist Accreditation in Cardiology in 2005. Subsequently, he underwent advanced heart failure and transplant cardiology training at Massachusetts General Hospital, Harvard Medical School, MA, USA, in 2007. He also underwent renal sympathetic denervation in hypertension and heart failure training at the Alfred, Victoria, Australia, in 2013. He passed the ASCeXAM and obtained his Diplomate certification from the USA National Board of Echocardiography in June 2015. His clinical and research interests include novel therapeutics and echocardiographic imaging of heart failure and resistant hypertension. He has numerous publications on various aspects of heart failure and renal denervation in resistant hypertension.

**Christopher LIEN***Senior Consultant, Geriatric Medicine, Changi General Hospital*

Dr Christopher Lien is a Senior Consultant in the Department of Geriatric Medicine, Changi General Hospital (CGH). After graduating from National University of Singapore (2008), he completed specialist training in general internal medicine and geriatric medicine in Dundee, Angus and Perthshire, Scotland, UK (1995–2001) and holds a Master of Public Administration from the John F. Kennedy School of Government, Harvard University, MA, USA (2012–2013). He has been the Director of Community Geriatrics at CGH since 2006, and his main areas of interest have been in the development of transitional, intermediate and long-term care services for the elderly, and Parkinson's disease in older people. He is also the Chairman of the Chapter of Geriatricians, College of Physicians, Academy of Medicine, Singapore, and is a Board Member of NTUC Health, St Andrew's Community Hospital Management Committee and the Lien Centre of Palliative Care at Duke-NUS Medical School.

**LIN Jingyi***Senior Physiotherapist, St Andrew's Community Hospital*

Ms Lin Jingyi is a Senior Physiotherapist at St Andrew's Community Hospital (SACH). She worked as a physiotherapist for four years at Ang Mo Kio-Thye Hua Kwan Hospital and Khoo Teck Puat Hospital before joining SACH in 2010. She graduated from Nanyang Polytechnic, Singapore, in 2007 and was awarded a master's degree in neuro-physiotherapy from the Hong Kong Polytechnic University in 2015. Her areas of specialisation include neurological rehabilitation and physical rehabilitation for the geriatric population. Jingyi has participated in data collection for a few studies, namely the efficacy of gait trainer in stroke rehabilitation, transcranial magnetic stimulation for persons with Parkinson's disease and rehabilitation after hip fractures. She currently manages both the dementia and the subacute wards, providing rehabilitation to a spectrum of clients.

**Jeremiah LOH***Nurse Manager, Nursing, St Andrew's Community Hospital*

Mr Jeremiah Loh obtained his Nursing Registration from the Singapore Nursing Board after completing his diploma at Nanyang Polytechnic (NYP), Singapore in 2001. He went on to complete his Bachelor of Nursing in 2006 at the Griffith University, Queensland, Australia. In the same year, he was awarded an Educational Sponsorship from Singapore General Hospital and spent a year pursuing an Advanced Diploma in Nursing (Orthopaedics) at NYP. In 2010, he was awarded the Courage Fund Bursary Award for postgraduate study, and obtained his Master of Science in Health Administration from Edinburgh Napier University, Scotland, UK, in 2013. His areas of interest include the rehabilitation of patients with musculoskeletal injuries and complex transmurial patient care. Prior to his current appointment at St Andrew's Community Hospital, Jeremiah held various clinical, administrative and management portfolios.

**LOKE Shi Jia***Senior Physiotherapist, Rehabilitative Services, Changi General Hospital*

Since graduation from Nanyang Polytechnic, Singapore, Ms Loke Shi Jia has been working at Changi General Hospital (CGH) for the past seven years as a physiotherapist. She specialises in cardiopulmonary physiotherapy, working with patients in intensive care and providing exercise for patients with cardiopulmonary conditions for the last five years. She has a keen interest in secondary prevention of cardiovascular conditions, such as post-myocardial infarction and heart failure. Shi Jia has been involved in the CGH cardiac care team and subsequently the ValuedCare Heart Failure Programme team since its conception in 2013. She has been heading the physiotherapy cardiopulmonary team and CGH cardiac exercise class for the last three years. Shi Jia personally enjoys exercising regularly and believes in regular exercise for the prevention of cardiovascular disease and injury.

**LOW Mui Lang***Executive Director, The Salvation Army Peacehaven Nursing Home*

Mdm Low Mui Lang is the Executive Director of The Salvation Army Peacehaven Nursing Home. She holds a Master in Healthcare Management and is a rehabilitation nursing clinician. Mdm Low was awarded The President's Nurses Award in 2010, the highest accolade for a nurse. Mdm Low piloted several projects at Peacehaven to help with the remodelling of residential care in Singapore, including: a dementia-specific facility; a transitional convalescence facility; InGot, an IT system with a full clinical suite built on cloud computing; and Welmed, a research programme using exercise machines for rehabilitation. The dementia-specific facility won the Ministry of Health's ExCEL Award 2010 Best Innovative Project (2nd Prize) and the 2014 Ageing Asia Investment Forum's 2nd Asia Pacific Eldercare Innovation Award for Best Dementia Care Programme. The rehabilitation programme won the 2015 Ageing Asia Innovation Forum's 3rd Eldercare Innovation Award for Best Rehabilitation Operator. Mdm Low was instrumental in the partnership with The Salvation Army Palu Academy, Indonesia, where Indonesian nurses are hired to form part of the care staff in Peacehaven. She also conducted a job redesign in direct care, resulting in the recruitment of senior care associates to close the language barrier between foreign talent and residents/clients. Mdm Low is involved in healthcare committee work groups and often engaged as a speaker at conferences. She is also the advisor at Woodland Integrated Campus and a consultant for residential dementia care at Agency for Integrated Care, Singapore.

**Michael MACDONALD***Consultant, Cardiology, Changi General Hospital*

Dr Michael MacDonald is a Consultant Cardiologist in the Department of Cardiology, Changi General Hospital. He gained his MBChB and Bachelor of Science (Honours) from the University of Aberdeen, Scotland, UK. He underwent his clinical cardiology training in Glasgow, UK, where he subspecialised in heart failure and cardiac imaging. He also spent time at the Royal Brompton Hospital, London, UK, as a cardiovascular magnetic resonance (CMR) fellow. He spent three years researching heart failure with Prof John McMurray

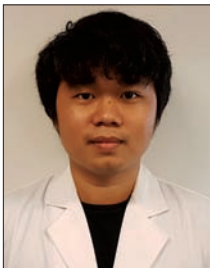
at Glasgow University, Scotland, UK, obtaining a Postgraduate Research MD. His subspecialty interest is in heart failure and cardiac imaging including the provision of cardiac computed tomography, CMR imaging and echocardiography. His research interests lie in the epidemiology of heart failure and the intersection between heart failure and diabetes mellitus.



Norhayah MD NOOR

Senior Nurse Clinician, Nursing, Changi General Hospital

Ms Norhayah Md Noor is a nurse trained in mental health, with more than 20 years of nursing experience. She received the Healthcare Humanity Award in 2011, and is an Advanced Certificate in Training and Assessment-certified trainer and a certified Dementia Care Mapper. Ms Norhayah graduated with a Bachelor of Nursing from La Trobe University, Victoria, Australia, and has worked with adult and elderly patients with both medical and psychiatric conditions. She was awarded the Health Manpower Development Plan in 2008 in Elderly Care Programme in Melbourne, Australia. She has been trained in dementia care and currently provides home-based assessment and education to clients and carers. She also does community elderly screening and mental health training, and oversees operational matters for the Community Psychogeriatric Programme. Ms Norhayah has been a volunteer with the Singapore International Foundation and has conducted psychogeriatric trainings to healthcare professionals in Indonesia. She is also a pioneer team member of the Changi General Hospital (CGH) PEER Network, a voluntary peer-help programme that provides brief psychological support for CGH employees who are experiencing emotional difficulties due to work-related stress, critical incidents, burnout, compassion fatigue or personal problems.



Alon MENDEZ

Research Assistant, Singapore University of Technology and Design

Alon Mendez is a Research Assistant at the Singapore University of Technology and Design, where he works with functional surfaces for biomedical and commercial applications. He received his Bachelor of Engineering in Biomedical Engineering from National University of Singapore in 2014, where he studied the *in vitro* regeneration of human tissue. He has since been engaged in academic research, with particular focus on antimicrobial surfaces and material functionalisation through micro- and nanotopographies.



MOHAN Tiruchittampalam

*Deputy Chairman, Medical Board (Continuity Care Disciplines), Changi General Hospital
Senior Consultant, Accident and Emergency, Changi General Hospital*

A/Prof Mohan Tiruchittampalam is currently the Deputy Chairman of Medical Board (Continuity Care Disciplines) and Senior Consultant at Changi General Hospital (CGH). He was previously the Chief of the Accident and Emergency Department, CGH from 2008 to 2014. He is also concurrently the Chairman of the Residency Advisory Committee (Emergency Medicine), an Associate Professor at Yong Loo Lin School of Medicine, National University of Singapore, the Deputy Chief Medical Officer, Singapore Civil Defence Force and the Deputy Chairman of the Clinical Planning Group, Woodlands Integrated Health Complex, Singapore.

**Cheryl NG***Occupational Therapist, The Salvation Army Peacehaven Nursing Home*

Ms Cheryl Ng is an occupational therapist and has been with The Salvation Army Peacehaven Nursing Home for two years. She is also involved with assessment, rehabilitation and achievement of quality of life for the residents.

**NG June Ren***Senior Occupational Therapist, The Salvation Army Peacehaven Nursing Home*

Mr Ng June Ren is a senior occupational therapist with 11 years of work experience. His job scope includes the assessment, rehabilitation and achievement of quality of life for the residents. Mr Ng is also the Team Leader of the Rehabilitation Department.

**Ivan NGEOW***Senior Resident Physician, Geriatric Medicine, Changi General Hospital*

Ivan joined the Department of Geriatric Medicine at Changi General Hospital (CGH) in 2007 and helped establish a successful geriatric subacute ward. He believes that successful care transitions require careful end-to-end management of the patient's care journey, through interdisciplinary teamwork and clear articulation of expectations and goals. He is a systems thinker and has contributed to quality improvement projects that targeted system interfaces and care transitions, helping CGH to forge stronger working relationships with partners such as St Andrew's Community Hospital and the Agency for Integrated Care. Ivan helped establish Singapore's first Transitional Convalescent Facility, "Grace Corner", at The Salvation Army Peacehaven Nursing Home in 2011 and continues to provide direct patient care at the home. Ivan finds relief from the hazy chaos of human healthcare systems in the clean, crisp logic of computer science. He is fluent in Python, Java, C and x86 assembly language, and uses R at work in support of hospital administration.

**OH Hong Choon***Senior Manager, Health Services Research, Eastern Health Alliance*

Dr Oh Hong Choon is currently the Senior Manager of Health Services Research in Eastern Health Alliance. In addition to operations research-related work, Dr Oh is involved extensively in health programme evaluations and healthcare management analytics, including those pertinent to workload projection, capacity-planning and resource utilisation. Dr Oh received his doctoral degree in engineering

from National University of Singapore. He is the lead and co-author of peer-reviewed publications in both clinical and engineering journals. In addition, he has been a principal investigator and co-investigator of several grant-funded research studies. His research interests are in the areas of discrete event simulation and system dynamics, and healthcare resource optimisation under data uncertainty.



ONG Pui Sim

Senior Consultant, Psychological Medicine, Changi General Hospital

Dr Ong Pui Sim is a Senior Consultant and has been in the Department of Psychological Medicine, Changi General Hospital (CGH) since 2005. She also serves as the Director of Geriatric Psychiatry Service, CGH from 2012 and the Deputy Director for CGH's Community Psychogeriatric Programme. She was awarded the Ministry of Health's Health Manpower Development Plan (HMDP) Fellowship in psychogeriatrics in Sydney, Australia in 1995 and SingHealth HMDP Fellowship in sleep disorders in 2006. Besides regular inpatient and outpatient hospital services, she also provides consultation services to community hospital and nursing homes. Dr Ong has been on the management committee of the Alzheimer's Disease Association, Singapore, since 1994 and is also actively involved in undergraduate and postgraduate teaching at both National University of Singapore and Duke-NUS Medical School, Singapore. In addition, she is a member of the Tribunal for the Maintenance of Parents, Ministry of Social and Family Development, Singapore, from 2014. Her main areas of interest are in late-life depression and suicide, sleep disorders and community mental health promotion.



Sarah PAEZ

Associate Nurse Leader, Geriatric Medicine, Harvard Vanguard Medical Associates, Atrius Health

Ms Sarah Paez is the Associate Nurse Leader for the Department of Geriatric Medicine at Atrius Health in Boston, MA, USA. Her team of registered nurses, nurse practitioners, physicians, a social worker and a chaplain focuses on providing geriatric home-based and palliative care with the goal of promoting patient independence at home. A Wellesley College neuroscience graduate, Sarah has a Master of Science in Nursing from Boston College, MA, USA, and over ten years of experience as a community health nurse focusing on care for older adults. She is a strong advocate for nursing, advance care planning, patient education and compassionate healthcare for all.



POON Kein Boon

Senior Consultant, Orthopaedic, Changi General Hospital

Dr Poon Kein Boon graduated from Kaohsiung Medical University, Taiwan, in 1995. He completed his Orthopaedic Residency Training Programme at the Kaohsiung Medical University Hospital, Taiwan, and a one-year Postgraduate Orthopaedic Training at London Royal National Orthopaedic Hospital, UK, under the mentorship of Prof George Bentley. Dr Poon is an orthopaedic senior consultant who specialises in the management of simple and complex limb fractures, pelvic and acetabular fractures and fragility fractures in the elderly,

and adult knee and hip joint replacement surgeries. His specialist areas of interest are in the treatment of fractures and joint replacements using minimally invasive surgical techniques. In addition, Dr Poon is committed to the AOTrauma education of the AO Foundation and is the leader of the orthogeriatric team, managing fragility hip fracture patients. He is also an appointed Senior Clinical Lecturer at the Yong Loo Lin School of Medicine, National University of Singapore.



PWEE Keng Ho

Advisor, Health Services Research, Eastern Health Alliance

Dr Pwee Keng Ho is a public health doctor in the Eastern Health Alliance's Health Services Research Department. He conducts health technology assessment (HTA) to make informed decisions on the use of health technologies in Changi General Hospital. His research interests include methods in HTA, processes for employing HTA in decision-making, clinical practice guidelines development methodology and methods in evidence-based healthcare in general.



Jessica QUAH Li Shan

Associate Consultant, Respiratory and Critical Care, Changi General Hospital

Dr Jessica Quah joined Changi General Hospital's Department of Respiratory and Critical Care Medicine as an Associate Consultant in 2016. She graduated from Yong Loo Lin School of Medicine, National University of Singapore (NUS) in 2009 and received her Master of Medicine (Internal Medicine) and Membership of the Royal Colleges of Physicians of the United Kingdom in 2012. She is currently undergoing further training to attain specialist accreditation in intensive care and concurrently serves as Clinical Lecturer at NUS. Her current interest is in the use of innovative technologies to enhance healthcare delivery in both the hospital and the community.



John RUSH

*Professor Emeritus, Duke-NUS Medical School
Adjunct Professor, Psychiatry and Behavioral Sciences, Duke University School of Medicine*

Dr John Rush is Professor Emeritus of Duke-NUS Medical School and Adjunct Professor of Psychiatry at Duke University Medical School, NC, USA. Having graduated with an MD from Princeton, NJ, and Columbia, NY, and the University of Pennsylvania, PA, USA, with a Psychiatric Residency Program, he spent 30 years at the University of Texas Southwestern Medical Center in Dallas, TX, USA, where he was the Vice-Chair for Research in Psychiatry, Vice-Chair of the Department of Clinical Sciences and founder of the Clinical Scholars Program, which offered a master's degree designed to enhance the research skills and grant success of clinicians. In Singapore (2008–2013), he was the Chief Executive Officer of the Singapore Clinical Research Institute, Vice-Dean of Clinical Sciences and founder of the Academic Medicine Research Institute (AMRI) at Duke-NUS Medical School/SingHealth. AMRI offered innovative mentoring and career development programmes for trainees and practitioners in patient-oriented research. His own

research was in the development and testing of medications, somatic treatments, psychotherapy and disease management protocols for patients with depression or bipolar disorders. An author of more than 800 publications, his work has received numerous awards including “The World’s Most Influential Scientific Minds” from Thomson Reuters in 2014.



Halimah SARIM

Telecarer, Health Management Unit, Eastern Health Alliance

Ms Halimah Sarim, who holds an Advanced Diploma in Gerontology, has been a Registered Nurse with the Singapore Nursing Board since 1990. She has more than 15 years of acute medical and surgical working experience, having worked in various restructured hospitals in Singapore. For the past 11 years, she has been working at Bright Vision Community Hospital in various ward settings, including the rehabilitation, subacute, nursing home and chronic sick unit wards. She is also an Infection Control Nurse at the hospital. For the last three years, Halimah has also been working as a Care Coordinator with the Agency for Integrated Care’s ACTION team. While at Bright Vision Community Hospital, she was awarded two Health Manpower Development Plan awards – for gerontology in 2010 and orthopaedics in 2011. Ms Halimah is currently a Telecarer in the Health Management Unit, Eastern Health Alliance, where she provides post-discharge telecare and care management to patients with chronic diseases who are discharged from Changi General Hospital.



Eugene SHUM

Chief Corporate Development Officer, Eastern Health Alliance

Dr Eugene Shum is the Chief Corporate Development Officer at Eastern Health Alliance (EHA) where he oversees strategic planning and development and community care. He is also a public health physician. His areas of interest include population health, and health policy and management. Dr Shum has held various portfolios in the Ministry of Health, including epidemiology and disease control, clinical quality and health services development. He was previously the Director of Medical Affairs at Khoo Teck Puat Hospital, Alexandra Health System. Dr Shum is the Associate Programme Director of the National Preventive Medicine Residency Programme at EHA. He is also an Adjunct Assistant Professor at the Saw Swee Hock School of Public Health, National University of Singapore and an Adjunct Faculty Member at the School of Information Systems, Singapore Management University.



Alison SIM

Director, Nursing Services, St Andrew’s Community Hospital

Alison Sim graduated from the University of Sydney, Australia, in 1996, with a Bachelor of Health Science (Nursing). She joined St Andrew’s Community Hospital (SACH) in 2000. In 2005, Alison obtained an Advanced Diploma in Nursing (Neuroscience) offered by Nanyang Polytechnic, Singapore, and in 2012, she obtained a Graduate Diploma in Healthcare Management and Leadership, offered jointly by Singapore Management University and SingHealth. Specialising in neuroscience and rehabilitation, Alison has been a key influencer and active contributor in SACH’s service developments over the years.

**Johnathan SIEW Jun Howe***Improvement Executive, Office of Improvement Science, Changi General Hospital*

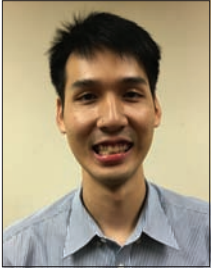
Mr Johnathan Siew works at Changi General Hospital as an Improvement Executive specialising in human factors design and engineering. He graduated from SIM University's Human Factors in Safety Programme and also holds a Diploma in Product and Industrial Design from Temasek Polytechnic, Singapore. He is currently pursuing a master's degree in smart product design from Nanyang Technological University, Singapore.

**Eberta TAN Jun Hui***Consultant, Endocrinology, Changi General Hospital*

Dr Eberta Tan is a Consultant Specialist in Changi General Hospital's Department of Endocrinology. She graduated with an MBBS from National University of Singapore in 2004. Thereafter, she attained a Membership of the Royal Colleges of Physicians of the United Kingdom in 2008 and qualified as a specialist in endocrinology in 2013. Dr Tan has a special interest in type 1 diabetes mellitus and gestational diabetes mellitus, and spent a sabbatical year in 2013 to pursue this interest. She is currently the Assistant Director of the Diabetes Centre and is the Project Lead for Inpatient Hypoglycaemia Prevention in Changi General Hospital. She strongly believes that empowerment through education and engagement, and providence of affordable resources to all patients is key to management of diabetes mellitus.

**Gilbert TAN***Senior Consultant, Family Physician and Assistant Director, Clinical Services, Head Office, SingHealth Polyclinics*

Dr Gilbert Tan did his basic medical degree in Singapore and graduated in 1996. He was awarded Master of Medicine in Family Medicine in 2001 and the Fellowship of the College of Family Physicians (Singapore) in 2004. Dr Tan is currently Assistant Director of Clinical Services at SingHealth Polyclinics – Head Office. He still runs clinics at Geylang Polyclinic, seeing patients in the family physician clinic. In addition to clinical work, Dr Tan is also involved as a national examiner for family medicine and Adjunct Assistant Professor at Duke-NUS Medical School. His clinical and research interests are in chronic disease management, eldercare and mental wellness. He is currently spearheading care transformation efforts in SingHealth Polyclinics.



Justyn Euwen TAN

Senior Occupational Therapist, Rehabilitative Services, Changi General Hospital

Mr Justyn Tan graduated from the University of South Australia with a Bachelor of Applied Science (Occupational Therapy) in 2012 and started working at Changi General Hospital that same year. As an Occupational Therapist in the Rehabilitative Services Department, Justyn has had experience in patient care in the inpatient, outpatient and community settings. He has worked with persons having medical, neurological, orthopaedic, geriatric or hand conditions. His interest is in working together with patients and their families to reintegrate them into their homes and community after their stay in the acute hospital.



Sharon TAN

CREST Coordinator, PEACE-Connect Cluster Operator

Ms Sharon Tan is the CREST (Community Resource, Engagement and Support Team) Coordinator at PEACE-Connect Cluster Operator (PeCCO). She started as a volunteer at PEACE-Connect Neighbourhood Link in 2005 and subsequently joined PeCCO as a Social Work Assistant, coordinating CREST programmes. She has served in CREST since 2014, working with the elderly with mental health issues. She liaises with and makes referrals to the various community partners to provide outreach, basic mental health information and support for clients and their families. PeCCO reaches out to the senior residents of the nine blocks of Housing Development Board rental one- or two-room units in the Kampong Glam constituency, and provides social and emotional support for the old, frail and lonely.



TAN Shumei

Senior Physiotherapist, Rehabilitative Services, Changi General Hospital

Ms Tan Shumei received her physiotherapy degree from the University of Melbourne, Australia, and has since been working at Changi General Hospital. Her clinical interest is in orthopaedics within inpatient settings and she has been the clinical leader in this area for the last three years. Specific to the hip fracture patient population, she has been involved in quality improvement projects, training sessions for junior physiotherapists and recently started on clinical research projects for the patient population. She has been a member of the ValuedCare Hip Fracture Programme team since it started in 2013.

**TAN Teck Jack***Director, Northeast Medical Group and Bedok Family Medicine Centre*

Dr Tan Teck Jack is the Director of the Northeast Medical Group and the Bedok Family Medicine Centre, a public-private partnership project of Eastern Health Alliance (EHA). After graduating from the University of Melbourne, Australia, he went on to pursue postgraduate diplomas in dermatology and occupational medicine, and a master's degree in public health. Dr Tan currently sits on EHA's Primary Care Advisory Committee and the ValuedCare Oversight Committee. He is the Chairman of the Board of Directors of the Northeast Medical Group and a medical logistics company. He has also been a regular speaker for numerous community engagements and television interviews. In his spare time, he contributes to St Andrew's Nursing Home, his church and a crisis relief organisation.

**Trina TAN***Social Work Manager, The Salvation Army Peacehaven Nursing Home*

Ms Trina Tan graduated with a Bachelor of Social Sciences (Honours) in Social Work from the National University of Singapore in 2008. She started as a medical social worker at Changi General Hospital, where she gained exposure to various disciplines, such as general medicine, cardiology, infectious disease and geriatric medicine. Trina moved on to The Salvation Army Peacehaven Nursing Home in 2010 as she was interested in the intermediate- and long-term care (ILTC) sector. Trina is currently the social work manager and oversees a team of six social workers who provide psychosocial support to all 430 residents and clients as well as their family members in the various services that Peacehaven runs: Long-Term Nursing Home; Nursing Home Respite Care; Transitional Convalescent Facility; and Integrated Home and Day Centre. Trina is accredited under the Singapore Association of Social Workers.

**Leeanna TAY***Executive, ValuedCare Programme Office, Changi General Hospital*

Ms Leeanna Tay joined Changi General Hospital in February 2015 and is the Project Facilitator for the ValuedCare (VC) Hip Fracture Programme. She works closely alongside Dr Poon Kein Boon, Dr Goh Kiat Sern and the VC Hip Fracture Programme team on their transformative journey from a volume- to a value-based healthcare delivery model. The team aims to improve clinical outcomes and reduce system costs in integrated care delivery for hip fracture patients. Leeanna has continued to hone her healthcare management skills, building on her experience at the Singapore National Heart Centre and the Asian American Medical Group, where her role as a management associate was sponsored by SPRING Singapore. Leeanna's background spans the fields of medical and biological sciences; she received her undergraduate degree in Medical Microbiology and Immunology at the University of New South Wales, Australia.

**WONG Sweet Fun**

*Chief Transformation Officer, Alexandra Health System
Deputy Chairman, Medical Board, Yishun Community Hospital
Senior Consultant, Geriatric Medicine, Khoo Teck Puat Hospital*

Dr Wong Sweet Fun is the Chief Transformation Officer at Alexandra Health System, Singapore's northern healthcare system, which looks after a population of 800,000. She is concurrently the Deputy Chairman of Medical Board, Yishun Community Hospital and Senior Consultant in the Department of Geriatric Medicine, Khoo Teck Puat Hospital, Singapore. She plays a strategic leadership role in designing hassle-free services for patients and their families. She oversees the Contact Centre, Population Health Initiatives, Healthcare Innovation, and Research and Regional Health System Programme Office. As a trained geriatrician, she also provides clinical direction to the health services development from preventive care to case management of frail, chronically ill and complex patients within their homes and the community. She has been actively promoting health, fitness and ageing in place in community-dwelling older adults for the past 20 years.

**ZHANG Shu Hua**

Principal Dietitian, Dietetic and Food Services, Changi General Hospital

Ms Zhang Shu Hua is a Principal Dietitian at Changi General Hospital (CGH). She graduated from King's College London, UK, with a Bachelor of Science (Honours) in Nutrition and has also completed her Master of Nutrition and Dietetics at the University of Sydney, Australia. In 2011, she completed a two-month Health Manpower Development Plan attachment in cardiology in Taiwan. In her earlier working years, Shu Hua was involved in the area of weight management, diabetes mellitus and geriatrics care. Currently, she specialises in the area of cardiology, providing medical nutrition therapy to cardiac patients at CGH. She is a core team member of the CGH acute myocardial infarction and heart failure pathways, and of the ValuedCare Heart Failure Programme clinical team.

**Mohsin ZULIMRAN**

Senior Occupational Therapist, Rehabilitative Services, Changi General Hospital

After graduating from Nanyang Polytechnic, Mr Mohsin Zulimran went to Singapore Institute of Technology-Trinity College Dublin, where he obtained his Bachelor of Science (Honours). He has been working with various populations in the inpatient, outpatient and community settings. His specialty is in the rehabilitation of patients with cardiac conditions by assisting them in managing at home and increasing their quality of life. He has a special interest in lifestyle modifications and self-management in chronic diseases. He believes that this is key to keeping patients healthy in the community, thereby reducing hospital readmissions.

Keynote Session 1

**Adj A/Prof LEE Chien Earn**

*Group Chief Executive Officer, Eastern Health Alliance
Chief Executive Officer, Changi General Hospital*

Adj A/Prof Lee, a public health physician by training, is currently the Group Chief Executive Officer of the Eastern Health Alliance, the regional health system for eastern Singapore. He is concurrently the Chief Executive Officer of Changi General Hospital, a 1,000-bed public acute teaching hospital. His prior appointments included leadership positions in Health Services, Healthcare Performance Health Regulation and Health Services Finance in the Ministry of Health, Singapore.

A/Prof Lee is an Adjunct Associate Professor in the Saw Swee Hock School of Public Health, National University of Singapore. He was a member of the Medishield Life Review Committee, which is tasked to recommend enhancements to the national insurance programme, and chaired the subcommittee on universal coverage. A/Prof Lee currently also chairs the Singapore Healthcare Improvement Network, and is the Director of the Eastern Health Alliance Education Office and Innovation Office. A/Prof Lee was awarded the Public Administration Medal (Silver) in 2011 and the Commendation Medal in 2003 by the Prime Minister's Office.

Keynote Speech

Delivering Care that Matters

Synopsis

The World Health Organization defines Integrated Health Services as the management and delivery of health services, such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services through the different levels and sites of care within the health system, and according to their needs throughout the life course. At the same time, the Commonwealth Fund assesses the performance of healthcare systems along the following dimensions: quality of care (effective, safe, coordinated, patient-centred); access (financial, timeliness); efficiency; equity; and healthy lives. Achieving these goals requires a fundamental shift in the way health services are managed and delivered, of which the regional health system is one possible way. Dr Lee will share how a regional health system in Singapore has worked with its partners, leveraging on technology and harnessing the power of the people, to deliver care that matters to its patients and population.

Keynote Session 2



A/Prof Kenneth MAK

Deputy Director Medical Services (Health Services Group), Ministry of Health

A/Prof Kenneth Mak is the Deputy Director Medical Services (Health Services Group), Ministry of Health (MOH), Singapore. He oversees the provision of health services in the primary care, community care and hospital settings, including mental health services. He co-led the Corporate Planning Team within MOH in 2015, looking at transforming the models of healthcare in Singapore, which provided the key themes that have been subsumed into Singapore's long-term healthcare care model transformation strategy. A/Prof Mak works closely with the Regional Health Systems and the Agency for Integrated Care on care integration initiatives in Singapore. A/Prof Mak also leads the Diabetes Programme Office within MOH, which supports Singapore's national efforts to control diabetes mellitus.

Keynote Speech

Transforming Care – Better Health, Better Care, Better Life

Synopsis

The changing demographics of Singapore, with an increasingly older and frail population, bring new challenges. Our current healthcare model is unsustainable if we fail to address the rising demand for healthcare resources and increasing healthcare costs. We must move away from an acute care-biased care model to one that is based in the primary and community care sectors. It is our quest to develop a better integrated, person-centred care model with a strong and long-lasting relationship between Singapore residents and family physicians. As we continue to make healthcare more accessible by expanding our healthcare infrastructure, we must move upstream and away from treating illnesses, and toward risk prevention and healthy lifestyle promotion. Our commitment to high-quality care encompasses a high regard for patient safety and assurance that care provision remains appropriate and efficient. We will introduce value-driven healthcare initiatives so as to improve clinical outcomes, while reducing cost. Our journey for care improvement can only be achieved if we understand our patients, their health needs and their care journeys well. Our regional health systems will play an active role in managing the care transitions across different acuity settings and facilitating the returning of our patients back to productive roles in their community. Only by doing so will we achieve better health, better care and better life for all in Singapore.

Day 1: Workshops (Thursday, 10 November 2016)

Time	Programme	Venue
0900–1200	A Primer to Human Factors in Healthcare	Lecture Room, Level 1, Changi General Hospital
0900–1630	Community Nursing Workshop: Patient Assessment and Management in the Community	Seminar Room, Integrated Building, Level 3, Changi General Hospital
0830–1200	Grant Writing	Inspire Room, Centre for Innovation, Level 1, Changi General Hospital
0830–1200	Health Services Research: Healthcare Capacity Planning 101	Spark Room, Centre for Innovation, Level 1, Changi General Hospital
1300–1700	Health Services Research: Programme Evaluation	Spark Room, Centre for Innovation, Level 1, Changi General Hospital
1300–1700	Systematic Reviews Go! Gotta Catch 'Em All!	Seminar Room, Level 2, Changi General Hospital
0900–1700	Transport in the Critically Ill	Centre of Simulation Institute, Level 1, Changi General Hospital

Day 2: Tracks (Friday, 11 November 2016)

Time	Programme	Venue
0830–1030	Official Opening Ceremony and Keynote Sessions Guest-of-Honour Mr Gan Kim Yong Minister for Health	Auditorium, Training Centre, Level 1, Changi General Hospital
1330–1720	Community Palliative and Mental Health	Seminar Room, Integrated Building, Level 3, Changi General Hospital
1300–1600	Healthcare Education: Emerging Needs in Healthcare Transition	Seminar Room, Level 2, St Andrew's Community Hospital
1330–1615	Innovation	Centre for Innovation, Level 1, Changi General Hospital
1300–1730	Integrated Care	Lecture Room, Level 1, Changi General Hospital
1320–1715	Redesigning Care Process: Enhancing Patient Experience	Auditorium, Training Centre, Level 1, Changi General Hospital

Day 3: Site Visit (Saturday, 12 November 2016)

Time	Programme	Venue
Venue: Changi General Hospital		
1300–1545	Eastern Health Alliance Scientific Meeting GP CME Updates	Auditorium, Training Centre, Level 1
Venue: St Andrew’s Community Hospital		
0900–1000	Maximising Patients’ Potential: Rehabilitation in St Andrew’s Community Hospital	Seminar Room, Level 2
1000–1130	Tour	
Venue: The Salvation Army Peacehaven Nursing Home		
0800–1030	The Salvation Army Peacehaven Nursing Home’s Transition Programme	Auditorium, Level 2
	Launch of “Life We Know” Programme	
	Guest-of-Honour Ms Cheryl Chan Grassroots Adviser	
	Member of Parliament for Fengshan SMC	
1030–1230	Tour and Carnival Activities	

Day 1: Workshops

A Primer to Human Factors in Healthcare

OVERVIEW

Humans are a vital component of healthcare systems. Many everyday processes within the system function through the decisions and actions of humans. A resilient healthcare system needs to be able to leverage on human capabilities while compensating for human vulnerabilities. Human Factors is the science of understanding how humans and systems interact with one another. This workshop provides an introduction to human factors concepts that are relevant to healthcare workers and the work system around them.

Time	Title	Speaker
0900–0940	Introduction to Human Factors	Syahid HASSAN, Human Factors Specialist, Office of Improvement Science, Changi General Hospital
0940–1020	Basics of Human Information Processing	
1020–1040	Refreshments and Networking	
1040–1120	Design and How It Affects Human Performance	Johnathan SIEW, Improvement Executive, Office of Improvement Science, Changi General Hospital
1120–1200	Understanding Human Error	Syahid HASSAN
1200	End	

Community Nursing: Patient Assessment and Management in the Community

OVERVIEW

AM Session: Workshop 1 – Serious Illness Care Training

The Serious Illness Care Programme facilitates appropriate conversations between clinicians, seriously ill patients and their families. Drawn from best evidence-based practices in palliative care, the intervention provides guidance for clinicians to initiate these difficult conversations in the right way, at the right time and develop a personalised serious illness plan. Learning methods will include a didactic presentation, videos with reflections and role play with feedback to put your new skills into practice. By the end of the programme, participants should be able to initiate conversations with patients and families about their illness and the types of services and treatment options available. More information at: <https://www.ariadnelabs.org/areas-of-work/serious-illness-care/>.

PM Session: Workshop 2 – Patient Assessment and Management

The main goal of a home-based primary care programme is to provide high-quality patient care for the right patients, at the right time and within their goals of care, while using resources efficiently. To proficiently execute these programmes, a well-structured strategy to determine which patients will benefit from the services and what level of care is required needs to be defined. In this session, we will discuss patient selection and risk stratification tools used in the United States, specifically at Atrius Health. An overview of some of the assessment tools used by Atrius Health clinicians, including the Fall Risk Assessment and MOCA, as well as the Teach Back Method for improving patient and family adherence to instructions, will be described. Finally, we will review the tools that are commonly used for assessing caregiver needs and the unique community services available in eastern Massachusetts.

Time	Title	Speaker
0900–1200	Serious Illness Care Training	Sarah PAEZ, Nurse Practitioner and Associated Nurse Leader, Harvard Vanguard Medical Associates
1200–1300	Lunch	
1300–1350	Patient Selection and Risk Stratification	
1350–1400	Q&A	
1400–1450	Patient and Family Education in the Community	
1450–1500	Q&A	
1500–1530	Tea Break	
1530–1620	(a) Assessing Caregivers' Needs and Stressors (b) Overview of the Support Services Available in the United States	
1620–1630	Q&A	
1630	End	

Grant Writing

OVERVIEW

This interactive workshop will review eight essential elements that are required for a successful research grant application. Elements include: (1) identification of an impactful clinical or theoretical challenge/problem that, if addressed, can change either practice or theory; (2) specification of hypotheses to address the problem; (3) development of a persuasive rationale; (4) development of persuasive pilot data; (5) specification of protocol design and methods; (6) specification of analytic plans; (7) creation of a realistic estimate of resource needs, budget, personnel and overall feasibility; and (8) formation of a scientific team/staff to execute the proposed project with contingency plans.

This workshop addresses the needs of clinical- or laboratory-facing researchers who are early in their careers, with an interest in and ambition for participating in world-leading patient-oriented research efforts. Participants should come with a rough outline of their ideas (one page maximum), even if tentative, to form a basis for interaction among attendees. The workshop will be informal and interactive in order to illustrate, by way of experience, the deliberative processes and intellectual challenges entailed in developing a successful grant application.

Time	Title	Speaker
0830–0900	Top Ten Reasons Why Grants Fail!	John RUSH, Professor Emeritus, National University of Singapore and Adjunct Professor of Psychiatry, Duke University Medical School
0900–0945	From Idea to THE Question	
0945–1020	Making Your Rationale Sing	
1020–1040	Break	
1040–1110	Questions to Hypotheses to Design	
1110–1140	Methods that ARE Feasible	
1140–1200	Polishing to Win	
1200	End	

Health Services Research: Healthcare Capacity Planning 101

OBJECTIVES

The aim of this workshop is to allow attendees to gain: (a) basic knowledge on the existing workload projection methodologies that are relevant to the healthcare sector; (b) practical experience in performing workload projection using Microsoft Excel; and (c) basic knowledge of queueing theory and how it can be applied to support healthcare capacity-sizing decision-making processes.

OVERVIEW

In healthcare, workload projection estimates the future volume of patients who need to be served at specific healthcare facilities. It is a critical step that needs to be performed prior to any healthcare capacity-planning decision-making process, to ensure that future patient needs are met in a timely manner and future specific healthcare facilities are adequately utilised. In this workshop, the speaker will introduce several workload projection methodologies that are reported in the literature and discuss how healthcare workload can be differentiated by several factors, including medical discipline, patient age group, gender and area of residence, etc. There will also be hands-on activities, which will allow participants to gain practical experience in performing workload projection using Microsoft Excel. In addition, the speaker will introduce queueing theory and illustrate how it can be applied to support healthcare capacity-sizing decision-making processes with consideration of patient waiting time and resource utilisation.

Time	Title	Speaker
0830–1000	Healthcare Capacity Planning 101: Workload Projection	OH Hong Choon, Senior Manager, Health Services Research, Eastern Health Alliance
1000–1030	Refreshments and Networking	
1030–1200	Healthcare Capacity Planning 101: Capacity-Sizing	

Health Service Research: Programme Evaluation

OBJECTIVES

This talk will help attendees: (a) understand what programme evaluation is and how it relates to the improvement of healthcare delivery; and (b) apply the concepts of programme evaluation.

OVERVIEW

Healthcare is rapidly changing in tandem with the use of technology and innovative solutions in the delivery of care to patients. It is, however, important to evaluate if such new services and technologies have achieved their intended goals and outcomes. Decision-makers would also need evidence to guide their decision on whether such new services and technologies should become mainstream. Programme evaluation forms the framework for doing so. In this talk, the speaker will give an introduction on what programme evaluation is, how it fits into improving care and the concepts of conducting a programme evaluation. This workshop is relevant to healthcare providers considering implementing or have recently implemented new services, and to administrators involved in the operations of new services.

Time	Title	Speaker
1300–1430	Programme Evaluation: Overview	CHOW Wai Leng, Deputy Director, Health Services Research, Eastern Health Alliance
1430–1500	Refreshments and Networking	
1500–1630	Designing a Programme Evaluation: Case Discussion	
1630–1700	Q&A	
1700	End	

Systematic Reviews Go! Gotta Catch 'Em All!

OBJECTIVES

At the end of this workshop, participants should be able to: (a) explain what a systematic review is and how it may be used; (b) describe the steps in carrying out a systematic review; (c) find systematic reviews to support decision-making; and (d) critically appraise a systematic review and judge its relevance to your own setting.

OVERVIEW

You are an intrepid researcher, keen to find the best evidence from studies in the scientific literature. There are millions of studies available and not all of them are the ones you want. How will you find, appraise and synthesise only those studies that are relevant to your research?

This half-day workshop will introduce attendees to systematic reviews of the scientific literature, what they are and how to use them.

Questions answered in this workshop:

- Why do systematic reviews?
- What is a systematic review?
- What are the steps in systematic reviewing?
 - Framing the question
 - Searching the literature
 - Critical appraisal of studies
 - Putting it all together (narrative synthesis and meta-analysis)
- How are systematic reviews used?
- How do I know if I can trust a systematic review?

Time	Title	Speaker
1300–1500	Workshop Part 1	PWEE Keng Ho, Advisor, Health Services Research, Eastern Health Alliance
1500–1530	Refreshments and Networking	
1530–1700	Workshop Part 2	
1700	End	

Transport in the Critically Ill

OBJECTIVES

Critically ill patients are constantly moved from location to location, and their journey is fraught with complications. In fact, transportation of the critically ill has been thought to contribute to many errors and poor outcomes. This course is a one-day compendium of simulation, refreshers and talks on the important aspects of moving critically ill patients from point A to point B safely. The faculty has decades of medical retrieval experience and the workshop is open to professionals from all fields of healthcare who are involved in moving patients.

Time	Title	Speaker
0900–0930	Simulation and Team Introduction	All facilitators
0930–1000	Lecture: Principles of Transport Medicine	Rahul GOSWAMI, Consultant, Accident and Emergency, Changi General Hospital
1000–1030	Quiz: Critical Care Refresher	Rahul GOSWAMI; ANG Peck Har, Associate Consultant, Accident and Emergency, Changi General Hospital
1030–1045	Break	
1045–1215	Group Work: Equipment/Ambulance Demonstration	Irene GAMUSO, Senior Staff Nurse; Mohd Himmah JUMALA, Senior Staff Nurse, Accident and Emergency, Changi General Hospital
1215–1300	Lecture: Paediatric Transport Needs	Rahul GOSWAMI
1300–1315	Group Work: Simulated Scenarios to Groups	All facilitators
1315–1400	Lunch	
1400–1430	HiFi Simulation: Multistage Scenario	All facilitators
1430–1515	Debrief	Rahul GOSWAMI; ANG Peck Har
1515–1545	HiFi Simulation: Second Scenario	All facilitators
1545–1630	Debrief	Rahul GOSWAMI; ANG Peck Har
1630–1700	Recapitulation of Workshop	Rahul GOSWAMI
1700	Feedback & End	

Day 2: Tracks

COMMUNITY PALLIATIVE AND MENTAL HEALTH

OVERVIEW

Demographic shifts and societal changes are exerting increasing demands on our healthcare systems. With a rapidly ageing population and an accompanying rise in chronic diseases and comorbidities, healthcare organisations are quickly adapting to meet the population's changing needs, resulting in a paradigm shift toward the provision of healthcare in the community. In this track, a group of expert speakers will share their model of care and experiences working with different client groups.

The track comprises three themes: (1) The Practice of Palliative Care at Home; (2) Partnerships in Community Mental Health; and (3) Ageing in Place – Integration of Services. Speakers of each theme come from a variety of healthcare backgrounds with the aim of presenting diverse perspectives and comparing practices between different healthcare professionals or countries. From palliative, mental health to rehabilitation in the community setting, this track looks into providing insight into the joys and challenges of working in the community, and promoting awareness and inciting innovation in supporting the care of some of the most vulnerable users of the healthcare system.

Theme 1: The Practice of Palliative Care at Home

Non-Cancer Palliative Care: Supporting Patients at Home

KOH Lip Hoe, Changi General Hospital

Time: 1330–1350

Palliative care in patients with advanced cancers is familiar to most people. However, patients with life-threatening end-stage organ failures can also benefit from palliative care. These patients, who can be just as symptomatic as patients with cancer, have various emotional, psychological and spiritual issues that need to be addressed. The disease trajectory for non-cancer patients is different from that for cancer patients, and their prognosis can be unpredictable. This sharing session will provide a brief overview of palliative care in non-cancer patients and the community services available to support them at home.

The Challenges and Joys of Palliative Care at Home

Joshua LAU, Metta Hospice Care

Time: 1350–1410

Palliative home care has been known to be emotionally and physically challenging for healthcare providers. In this session, the speaker discusses some of the common challenges faced by home hospice care providers and reveals the simple joys of being involved in such services.

The Practice of Palliative Home Care in the United States

Sarah PAEZ, Harvard Vanguard Medical Associates, Atrius Health

Time: 1410–1450

As the population of the United States ages, millions of Americans are living with advanced illness, leading to a shift in healthcare to focus on achieving quality patient-centred care. Individuals with advanced illness require a specialised and multidisciplinary treatment approach to care, frequently found through a palliative care team. Despite the fact that hospital-based palliative care programmes have grown over the past decade, the majority of older adults prefer to receive their care in their community or at home. We will discuss the national environment for palliative care in the United States, specific initiatives in Massachusetts, and the palliative care programmes at Atrius Health and VNA Care. There are substantial differences in identification, staffing and programme benefits between community palliative care programmes across the United States. However, the programmes are united by the fundamentals of excellent palliative care: an interdisciplinary team that helps patients with symptom management; a focus on goals of care discussions; and improved communication between patients, families and healthcare providers. Research efforts to help define the best way to support this patient population are ongoing.

Theme 2: Partnerships in Community Mental Healthcare

Continuum of Care

Anuradha KALIAPPAN, Changi General Hospital

Time: 1530–1620

Continuum of care involving collaborations between social and healthcare agencies is important to meet the needs of older persons, so that they can remain in the community for as long as possible. The capabilities of community eldercare agencies in managing older persons with psychogeriatric disorders are strengthened by means of networking and agency support. Networking is essential in establishing collaboration between social and healthcare agencies, and enables better coordination and cooperation between agencies so as to achieve sustainable partnerships.

Training and Consultancy

Norhayah MD NOOR, Changi General Hospital

Time: 1530–1620

Forging relationships via collaboration and training staff of eldercare agencies are essential in facilitating early detection and treatment of psychogeriatric disorders in older persons in the community. Capacity-building of eldercare agency staff is achieved through the provision of case discussion sessions and training programmes on the psychosocial aspects of ageing, common psychological and psychiatric disorders in older persons, and other specific topics related to psychogeriatric disorders. Consultation and support strengthen the capability of staff and enable them to better manage older persons with psychogeriatric disorders in the community, thus facilitating ageing in place at home. Networking links are established between general practitioners and primary healthcare doctors for the continuity of care of older persons in the community.

Community Involvement and Support

Sharon TAN, CREST @ PeCCO (PEACE-Connect Cluster Operator)

Time: 1530–1620

Community care and support is vital in ensuring continuity for people living in the community. The main aim of providing community care and support is to prevent people from falling into social isolation. People who are recovering from mental health illnesses or physical disability will benefit greatly from community care and support, enabling them to age independently and with dignity while battling their conditions. It is also important to collaborate with healthcare institutions to ensure that patients recover well and live life to the fullest in the community.

Partnerships – Integration and Challenges

ONG Pui Sim, Changi General Hospital

Time: 1530–1620

An ideal community mental health service requires comprehensive, integrated, seamless, proactive and prompt delivery with smooth transition of care, needs-based approach, appropriate training and support, effective inter-agency communication and close link between mental and physical health needs. Challenges and obstacles include a lack of coordination and cohesiveness among service providers, territorial issues, inadequate training and support, funding matters, high staff turnover and ineffective communication. These will result in the fragmentation of services, service gaps and delayed service provisions, increased crisis episodes, augmented caregiving burdens, and strains on institutional and residential services.

Theme 3: Ageing in Place – Integration of Services

Community Rehabilitation: Who Needs It and Why Is It Important?

Christopher LIEN, Changi General Hospital

Time: 1630–1650

Increasingly, data is showing that a significant number of patients in Singapore are inadequately rehabilitated following their admission and discharge from acute care. Also, without adequate rehabilitation, frail, older people in particular are at risk of functional decline and readmission to hospital. However, rehabilitation services that are intensive, consistent and progressive, and address short-, mid- and long-term goals with measurable outcomes are very difficult to access, provide and deliver. Only 30% of patients after acute stroke receive ongoing rehabilitation; 30% of patients return to their premorbid function after hip fracture, and only 30% of referrals to community rehabilitation services following discharge actually enrol into the services they are referred to. How can our system better recognise the need for rehabilitation and provide the required services for our ageing population? Systematic rehabilitation is important, not only to reduce readmissions to acute care, but also to decrease care burden and to avert nursing home admissions. How can we develop some of these pillars in our healthcare system? What can we learn from local and international models of practice?

Shifting Gears, Changing Focus, Bringing Health into the Community

WONG Sweet Fun, Alexandra Health System, Yishun Community Hospital and Khoo Teck Puat Hospital

Time: 1650–1710

Alexandra Health System (AHS) is Singapore's northern regional healthcare system, currently managing the 590-bedded Khoo Teck Puat Hospital and 428-bedded Yishun Community Hospital. By 2020, AHS will also manage the Admiralty Medical Centre, a primary care facility in Sembawang, and the Woodlands Integrated Healthcare Campus.

The imperative of a rapidly ageing urban society and the growing demands of disease chronicity have led to new considerations in the planning and building of the brick-and-mortar components of AHS, and partnerships with key community stakeholders. To cater to the needs of its 800,000 residents living in the north, AHS needs a system-wide transformation of its care delivery, including care integration across care settings. Equally important is the development of values and attributes, and appropriately targeted programming, to make Singapore a nurturing and caring society. AHS's population health strategy is built on lessons learnt in its earlier efforts in health promotion and public education for disease prevention, early detection and intervention, and supported care throughout the life course of an individual, aligned to the national Healthy Living Masterplan and Action Plan for Successful Ageing. To achieve sustainability, it works in tandem with non-health ministries and agencies to enhance population-level health and well-being, creating age- and dementia-friendly communities. The strategies developed and implemented to care for older adults will be shared in this presentation.

HEALTHCARE EDUCATION: EMERGING NEEDS IN HEALTHCARE TRANSITION

OVERVIEW

The Eastern Health Alliance Scientific Meeting 2016 features a brand new education track, which highlights the evolving strategies in modern healthcare education. It is important for medical learners to recognise the new challenges that arise from emerging needs in transitional healthcare. Attendees can expect to learn about the issues pertinent to modern healthcare education and how to ensure that future students are better supported and guided during their clinical attachments. Attendees can also look forward to enhancing their understanding of teaching strategies and how clinical environments can have an impact on learning needs.

Burnout and the Engagement of Learners and Teachers

Nicholas CHEW Wuen Ming, National Healthcare Group

Time: 1300–1345

Burnout is present as a hidden psychological burden in healthcare. In Singapore, each regional healthcare system is involved in transforming the way the population engages in health improvement. As the healthcare workforce sits at the heart of all the changes, they bear the brunt of the accumulating stress and run the risk of burning themselves out. It is therefore important that healthcare institutions properly address burnout to enable their workforce to meet the challenges ahead. Engagement has been presented as an organisational strategy to manage burnout. The speaker will explore the antecedents to engagement and the implications for learners and the workforce in our healthcare institutions. He will also highlight challenges faced by healthcare institutions around the world.

How Doctors Think: What Can Go Wrong?

GOH Siang Hiong, Changi General Hospital

Time: 1400–1445

In busy clinics, many experienced senior specialists would seem (to their junior colleagues) to be able to make accurate spot diagnosis, arrive at patient care plan rapidly and make sense out of a muddle of information, after sieving out the chaff and background noise. While this may seem the epitome of clinical acumen, and one that junior doctors aspire to, senior physicians know that it is a clinical sense (or gestalt) borne out of many years of training and exposure. Many know the pitfalls of such an approach, and would test their hypothesis and re-examine their assumptions if their first differentials do not stand up to scrutiny. Senior physicians are also aware that, if there are anchoring biases that cloud their judgement, mistakes can occur.

In this session, the speaker will share his experience in discerning when it is safe and appropriate to make rapid spot diagnosis, and when to correct the mistaken first assumptions. He will also examine some of the current theories in the field of medical literature on how clinicians think and formulate their diagnosis.

The Clinical Learning Experiences of Nursing Students in Singapore

LAU Sie Leng, Nanyang Polytechnic

Time: 1500–1545

The speaker will discuss the results of and insights into her study on learning needs in an educational setting. The study was approved by the University of Manchester Research Ethics Committee and the Nanyang Polytechnic Institutional Review Board in August 2015. The study will explore factors that hinder or enhance nursing students' learning during their clinical attachments.

INNOVATION

OVERVIEW

Innovation is an increasingly popular term with multiple applications in the healthcare industry. In seeking solutions to meet complex healthcare needs, Eastern Health Alliance (EHA) partners have been working hand-in-hand to effect a paradigm shift through innovation that will create the impact we need in today's healthcare demands and transform healthcare to respond to societal concerns. The Innovation Track at the EHA Scientific Meeting (EHASM) 2016 showcases the different innovation projects delivered by EHA in collaboration with academic and industry partners.

This year, EHA is privileged to invite Prof Augustus John Rush, Professor Emeritus, Duke-NUS Medical School, as the Plenary Speaker for the Innovation Track. Prof Rush is an internationally renowned clinician-scientist and mentor who has developed innovative programmes for clinical research and training in both the US and Singapore. Prof Rush has authored close to 600 papers and 100 books and chapters; he sits on editorial boards of several leading psychiatry journals and has received numerous invitations to speak at conferences around the globe. His speech at the EHASM 2016 Innovation Track will provide insights on how to develop and grow clinical research in public hospitals.

Plenary Session

Seeding and Growing the Innovation Clinical Research – Is There a Formula?

John RUSH, Duke-NUS Medical School and Duke University School of Medicine

Time: 1330–1415

This presentation discusses the challenges and critical ingredients necessary for success in grooming and developing clinicians in their pursuit of high-impact, clinically oriented research. The unique challenges of busy clinicians trying to conduct innovative patient-oriented research will be addressed. An innovation culture must repeatedly ask, "Isn't there a better way?" How to foster this perspective in a busy, production-oriented care system is a major challenge.

Essential knowledge about research design, regular interactions in multidisciplinary groups to challenge conventional wisdom with new ideas, strong collaborations with quantitative experts, and interactions with bench scientists and engineers to engage their skills in clinical problem-solving all help to germinate and nurture innovating thinking. The formation of a multidisciplinary team with a disease focus, combined with easily accessed support for pilot studies, engagement of external experts to critique ideas as they develop and evolve, and the availability of career mentors all create a platform that can promote innovation and clinically-oriented research careers. Case examples will illustrate these ingredients in action.

Micro-textured Films for Reducing Microbial Colonisation in a Clinical Setting

Alon MENDEZ, Singapore University of Technology and Design

Time: 1415–1445

One of the common causes of hospital-acquired infection (HAI) is the transmission of microbes through the high-touch surfaces in the hospital environment. Hospital furniture and equipment, such as bed rails, bed surface, supply cart, drip poles and over-bed tables, have been identified as high-touch surfaces. The current practice to minimise HAI occurrence is through rigorous and diligent cleaning routines. An emerging approach to counter HAI is the use of antimicrobial materials, such as silver nanoparticles and copper alloy materials, in the manufacturing of hospital furniture and equipment. Such materials function as biocides in disrupting microbe transmittance. An emerging non-biocides approach for antimicrobial material is textured surface. The majority of reported results on the antimicrobial materials and surfaces were conducted in well-controlled laboratory set-ups and focused on specific microbe. However, in practice, hospital furniture and equipment are exposed to a variety of microbes and the exposed surfaces experience constantly changing environments. Herein, we report the study of bacteria quantification on well-defined surface textured film mounted on high touch surfaces in a hospital ward.

Microtextured polycarbonate (PC) films were fabricated by nanoimprint technology. In-hospital tests were conducted on over-meal table in a designated geriatric ward. Bacteria colony counts on nanoimprinted films and control films were obtained at four time-points over an exposure period of 24 hours and analysed using statistical tool. At $p = 0.05$, micro-pillar and micro-groove structures on nanoimprinted films showed a statistically significant reduction in total bacteria and methicillin-resistant *Staphylococcus aureus* bacteria count compared to pristine PC and control surface. These results are potentially impactful as it is likely the first real-life testing of microtextured surface in controlling bacterial colonisation.

[Authored by Low HY, Mendez A, Otto KH, Khoo XJ, Engineering Product Development Pillar, Singapore University of Technology and Design; and Tan H, Tan TY, Li J, Chow T, Operations, Changi General Hospital.]

Diabetes Mobile Application

Eberta TAN Jun Hui, Changi General Hospital

Time: 1445–1515

The management of diabetes mellitus requires not just prescriptions and consultations with the doctor and the multidisciplinary team, but also effective education and empowerment of the patient. Traditionally, patient education takes place in the clinic when the patient sees the doctor, dietitian or diabetes mellitus nurse educator. Telehealth has taken up an important complementary role in this continual education of patients. Smartphones, being increasingly affordable and popular, act as a platform to improve communication between patients and healthcare professionals (such as diabetes mellitus nurse educators), as food and glucose diaries, and also as education and resource tools to aid in patients' food and insulin decisions.

This talk will introduce the Changi General Hospital Diabetes Diary, a smartphone application developed with a Singaporean twist, to complement the management of patients living in Singapore with type 1, type 2 and gestational diabetes mellitus, and the process that went behind its development.

Body Fluid Drainage System and Simulation Lung Model

Jessica QUAH, Changi General Hospital

Terry CHING, Singapore University of Technology and Design

Time: 1515–1545

The advancement in modern medicine is often driven by industrial initiatives and academic research. This has resulted in a technological evolutionary gap between diseases and methods of healthcare delivery that are deemed less financially lucrative. A good example would be the use of body cavity drainage devices, where some aspects of current practice have remained largely unchanged for four decades.

This lecture will describe a journey of creating an alternative solution to allow the drainage of pleural effusions to incorporate mobility, versatility and smooth transition between inpatient and outpatient care. We aim to demonstrate how engineering methods and solutions can add practical value while maintaining cost-effectiveness. Through multidisciplinary collaboration, simple and practical solutions can be found to make medical procedures and equipment more efficient, consistent and importantly, safer.

Self-Empowering and Enabling Kiosk

Eugene SHUM, Eastern Health Alliance

Time: 1545–1615

(Synopsis not available at time of print)

INTEGRATED CARE

OVERVIEW

Integrated care has become an international healthcare buzzword and is seen internationally as an important framework to develop better and more cost-effective health systems. As chronic disease burden continues to rise on the background of limited resources, it is challenging to achieve a high-quality and efficient healthcare system. The World Health Organization (WHO) advocates integrated care and defines integrated health services as health services that are managed and delivered in a way that ensures people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, at the different levels and sites of care within the health system, and according to their needs throughout their whole life.

Integrated care aims to provide the right care at the right time. Care integration allows for greater efficiency and effectiveness, less duplication and waste, more flexible service provision, and better coordination and continuity. Care integration also has the ability to encourage more holistic and personalised approaches to multidimensional health needs. Our invited speakers for the Integrated Care Track have vast experience in care integration at varying levels of the healthcare system and would be able to provide valuable insights on the challenges of care integration in our local healthcare landscape.

Integrating Primary Care and Community Health Care

FOCK Kwong Ming, Changi General Hospital

Time: 1300–1400

In 2008, integrated health service delivery was defined by the World Health Organization as “the organization and management of health service so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money”. Integrated care is a means to an end and not an end in itself. It is meant to fill the gaps that fragmented episodic specialised care created. At the macro-level (senior management and policymakers), it means considering the entire network of public, private and voluntary health services rather than looking at the public sector in isolation.

Integrated care can be achieved in seven ways: (1) integration via a package/bundle of preventive and curative intervention; (2) horizontal integration leading to a multipurpose service delivery point from a single facility; (3) vertical integration from primary, secondary, tertiary to community care services; (4) integrated services provision over time for continuity of care; (5) integration of policy and management of integration of services; (6) integration across sectors, e.g. health and social sectors; and (7) integration between payers and providers, making it easier to ensure that the incentives within the system encourage all providers to maximise care quality while minimising cost.

Attempts to deliver integrated care started with protocols that target single diseases, such as chronic obstructive pulmonary disease and diabetes mellitus social programmes. Such an approach could lend to further fragmentation. Integrating these programmes can be achieved through the ways mentioned above. A systematic review has identified ten principles for successful integration that include people-focus, comprehensive services across the care continuum, governance structure that includes all stakeholders group, performance, financial management and clinician integration. A system approach based on these principles have been found to be in successful health systems integration.

Population Health and the Community: What Does the Future Hold?

Eugene SHUM, Eastern Health Alliance

Time: 1400–1500

(Synopsis not available at time of print)

Shifting from Hospital- to Primary-Based Healthcare: Reinventing the Patient Journey through Integrated Frameworks

MOHAN Tiruchittampalam, Changi General Hospital

Time: 1530–1630

In this session, the speaker will discuss the shift from hospital- to primary-based healthcare from both the global and regional perspectives, and the importance of developing telemonitoring and rehabilitative technologies in preparation for more personalised care, so as to move toward an evidence-based approach to providing value-based affordable healthcare. He will also present case studies on public-private healthcare partnership initiatives.

Match-A-Nurse Programme: Augmenting Home Nursing Capacity*ANG Seng Bin, KK Women's and Children's Hospital**Time: 1630–1730*

As the Singapore population ages rapidly, the increasing demand for healthcare services will put a pressure on the current healthcare system. Manpower shortage, especially in the nursing sector, will affect the capacity of home nursing in Singapore and we would have to utilise technology to increase the efficiency of service delivery. Match-A-Nurse programme was piloted in early 2016. It makes use of matching algorithms to appropriately pair nursing competencies with patients' needs and geospatial matching algorithms to match nurses with jobs that are nearer to their homes so as to reduce travelling time. The pilot was specifically designed to have the manual process running in tandem with IT development that adds pre-planned enhancement to the software. This allows the technological system to better adapt to the actual processes of the programme and enhance the programme's efficiency. Match-A-Nurse programme hopes to be the innovative answer to our growing community needs and be part of the future of our community healthcare provision.

REDESIGNING CARE PROCESS: ENHANCING PATIENT EXPERIENCE

OVERVIEW

Chronic disease is a major health burden for the individual and the community, and its prevalence increases in tandem with an ageing population. This increased burden of chronic disease, coupled with an ageing population, strains the capacity of the healthcare sector in providing effective and efficient patient care. To meet the challenges of this increasing prevalence of chronic diseases and its healthcare demand, Eastern Health Alliance (EHA) and Changi General Hospital (CGH) have embarked on a transformative journey focusing on a value-based integrated care delivery model. It has incorporated evidence- and consensus-based best practice elements to improve clinical outcomes and reduce healthcare costs.

This track is differentiated from the other tracks through its panel discussions and sharing sessions from a diverse team of healthcare professionals from EHA, and the 'questions and answers' segment. The topics in this track include key improvements and/or enhancements for the acute care delivery and care transition post-acute phase to ensure continuity throughout the whole spectrum of care. Additionally, the discussions will shed light on valuable insights into improving patients' quality of life, maximising their functions and independence in the community, and optimising care throughout the healthcare journey, particularly in the primary care sectors.

Hip Fracture Panel Discussion

In December 2014, the EHA-CGH Hip Fracture Programme was implemented with the aim of improving quality patient care and reducing length of stay in the acute care hospital for patients with fractured hip.

Phase One Hip Fracture Programme

The Hip Fracture Programme team will share their experience on key improvements made within the CGH ecosystem, which comprise: (1) streamlining of care processes to focus on value delivery; (2) implementation of protocols to standardise delivery of best care; and (3) development of a case management model for enhanced care coordination and delivery of holistic care.

Phase Two Hip Fracture Programme

With the successful implementation of the Phase One Programme, the team embarked on Phase Two in January 2016. This phase focused on enhancing and integrating post-acute care for seamless care across the continuum, improving the quality of life of patients, and maximising their physical functions and independence in the community. Phase Two includes the establishment of an integrated care model, a partnership between CGH and St Andrew's Community Hospital (SACH), to ensure a seamless process for patients requiring post-acute rehabilitation services.

The three focal areas of the Phase Two Hip Fracture Programme are: (1) Post-Acute Care Rehabilitation Stage – development of an integrated clinical care model by CGH and SACH to ensure patients are expediently moved to SACH for post-acute rehabilitation services; (2) Secondary Osteoporosis Prevention Programme – a secondary prevention osteoporosis programme aimed at increasing the percentage of patients on osteoporosis treatment and reducing the risk of a second osteoporotic fracture; and (3) Falls Prevention Programme – a programme to screen patients for fall risk coupled with holistic targeted interventions to prevent falls.

Time	Topic	Speaker
1320–1335	Introduction	Emcee
1335–1345	Hip Fracture Programme: Our Journey, Challenges and Key Success Factors	POON Kein Boon, Senior Consultant, Orthopaedic, Changi General Hospital
1345–1355	Optimising Patients for Timely Transfer and/or Discharge	TAN Shumei, Senior Physiotherapist, Rehabilitative Services; LEE Yian Chin, Nurse Clinician, Case Management; Justyn TAN Euwen, Senior Occupational Therapist, Rehabilitative Services, Changi General Hospital
1355–1400	Q&A	
1400–1420	Continuity of Care at St Andrew's Community Hospital	Edward GOH, Consultant, Medical Services; Jeremiah LOH, Nurse Manager, Nursing; Anna LEE, Principal Occupational Therapist; LIN Jingyi, Senior Physiotherapist, St Andrew's Community Hospital
1420–1430	Q&A	
1430–1440	Care Beyond Acute Hospital: Changi General Hospital Specialist Clinics	GOH Kiat Sern, Consultant, Geriatric Medicine, Changi General Hospital; LEE Yian Chin; TAN Shumei
1440–1450	Charting the Future Plans	POON Kein Boon; GOH Kiat Sern; Edward GOH; LEE Yian Chin; TAN Shumei; Justyn TAN Euwen
1450–1500	Q&A and Closing	Leeanna TAY, Executive, ValuedCare Programme, Changi General Hospital
1500–1525	Tea Break	

Heart Failure Panel Discussion

In November 2014, the EHA-CGH Heart Failure Programme was inaugurated with the aim of improving quality care for patients with heart failure.

Phase One Heart Failure Programme

The enhanced key improvements that will be shared at this forum include: (1) streamlining of care processes to focus on value delivery; (2) implementation of protocols to standardise delivery of best care; and (c) development of a case management model for enhanced care coordination and delivery of holistic care.

Phase Two Heart Failure Programme

With the successful implementation of the Phase One programme, the team embarked on Phase Two in March 2016. Phase Two aimed to optimise care throughout the care continuum, particularly in primary care centres, namely Bedok Family Medicine Centre (FMC) and SingHealth Polyclinics. Against this backdrop, the Heart Failure Programme team has collaborated with primary care partners in the management of heart failure patients, with the primary aims of reducing heart failure-related readmissions within the 1st and 12th month post-hospitalisation.

The two focal areas for the Phase Two Heart Failure Programme are: (1) Primary Care Programme – primary care partners, Bedok FMC and SingHealth Polyclinics, were engaged in co-managing heart failure patients to reduce visits to CGH specialist clinics and optimise evidence-based medications in a timely fashion; and (2) Case Management – EHA Community Care Managers work collaboratively with CGH Inpatient Case Managers in achieving treatment adherence and reducing preventable readmissions.

Time	Topic	Speaker
1530–1540	Heart Failure Programme: Our Journey, Challenges and Key Success Factors	Kui Toh Gerard LEONG, Senior Consultant, Cardiology, Changi General Hospital
1540–1600	Acute Care Collaborative Practice: Stakeholders' Engagement	LOKE Shi Jia, Senior Physiotherapist; Mohsin ZULIMRAN, Senior Occupational Therapist, Rehabilitative Services; ZHANG Shu Hua, Principal Dietitian, Dietetic and Food Service; LEE Chai Hoon, Senior Pharmacist, Pharmacy, Changi General Hospital
1600–1610	Q&A	CHIN Woon Hsi, Manager, ValuedCare Programme, Changi General Hospital
1610–1630	Beyond Acute Care: Transition to the Primary Care Setting	Michael MACDONALD, Consultant, Cardiology; CAO Yan, Senior Nurse Clinician, Case Management, Changi General Hospital; Halimah SARIM, Telecarer, Health Management Unit, Eastern Health Alliance
1630–1645	A Collaborative Practice Model Comprising Primary Care Partners	TAN Teck Jack, Director, Northeast Medical Group and Bedok Family Medicine Centre; Gary KANG, Family Physician, Deputy Clinic Director, SingHealth Polyclinics – Sengkang
1645–1655	Q&A and Closing	CHIN Woon Hsi
1655–1715	Rising Up to the Challenge: Quiz Time	Emcee

Day 3: Site Visit

Eastern Health Alliance Scientific Meeting GP CME Updates

OVERVIEW

As part of the Eastern Health Alliance (EHA) Scientific Meeting 2016, we are pleased to invite fellow family physicians from our EHA umbrella institutions to update our general practitioner partners on topics relevant to our day-to-day practice on management of menopause, medication safety and fall risk assessment.

Time	Topic
Venue: Changi General Hospital	
1300–1345	Registration
1345–1400	Opening Address
1400–1420	Management of Menopause in General Practice
1425–1445	Medication Safety
1450–1510	Fall Risk Management: a Practical Approach for the GP
1510–1540	Q&A

Management of Menopause in General Practice

ANG Seng Bin, KK Women's and Children's Hospital

Time: 1400–1420

With the large proportion of baby boomers belonging to the menopausal age group, it is thus timely for the primary care sector to gear up to manage menopausal women and enhance their quality of life in their next stage of life.

Medication Safety

CHOW Mun Hong, SingHealth

Time: 1425–1445

Medication error is an important area of patient safety that can affect many patients. How we organise our work processes affects our function as individuals and as a clinical system. This session takes a practical view of various aspects of medication management in a clinic and how these can affect medication safety. Real-life challenges and how some of these can be addressed will be discussed.

Fall Risk Management: a Practical Approach for the GP

Gilbert TAN, SingHealth Polyclinics

Time: 1450–1510

As the population ages, fall risks and impact of falls increasingly become a health concern. The causes of falls are multifactorial and require a structured approach to address the issue. This talk presents a simple way to manage fall risks in elderly patients through screening for, assessing and reducing risk factors for falls.

The Salvation Army Peacehaven Nursing Home's Transition Programme

OVERVIEW

We are launching the “Living the Life We Know” programme as part of Eastern Health Alliance Scientific Meeting 2016. The objective of the programme is to simulate normalisation and reality within the nursing home. We want to empower our residents to live their former lifestyle as much as possible, using a modified economy. “Living the Life We Know” aims to give residents a better quality of life in The Salvation Army Peacehaven Nursing Home by replicating real-life activities in the respective rooms outside of their living areas, such as: salon – hair-dressing, manicure/pedicure; games room – mahjong sessions, arts and crafts, massage; lounge – karaoke, volunteer (musical) performances; mini-mart – provisions desired by residents; activity room – cooking, art therapy, beverage chit-chat; and clubhouse – movie-screening, Wii games, board games, etc.

Time	Topic	Speaker
Venue: The Salvation Army Peacehaven Nursing Home		
0800–0830	Registration	
0830–0840	Opening Address	Colonel Edward HILL, The Salvation Army, Territorial Chief Secretary
0840–0910	Introduction to “Life We Know” Programme	Mdm LOW Mui Lang, Executive Director, The Salvation Army Peacehaven Nursing Home
0910–0920	Launch of “Life We Know” Programme Guest-of-Honour Ms Cheryl Chan Grassroots Advisor Member of Parliament for Fengshan SMC	
0920–0940	Medical Perspective	Ivan NGEOW, Senior Resident Physician, Geriatric Medicine, Changi General Hospital
0940–1000	Transition through ILTC: A psychosocial perspective	Trina TAN, Social Work Manager, The Salvation Army Peacehaven Nursing Home
1000–1030	Psychosocial Health: Meaningful & Purposeful Activities	Clayton CHUA, Physiotherapist; Cheryl NG, Occupational Therapist; NG June Ren, Senior Occupational Therapist, The Salvation Army Peacehaven Nursing Home
1030–1230	Tour and Carnival Activities	

Maximising Patients' Potential: Rehabilitation in St Andrew's Community Hospital

OVERVIEW

St Andrew's Community Hospital (SACH) seeks to help patients receiving rehabilitation get back to their best possible function so that they may return to living independently in the community. What do we do to help our patients maximise their rehabilitative potential? How do we deliver person-centred care to our patients with dementia who require rehabilitation? This talk will cover an overview of the rehabilitation programme at SACH, highlighting SACH's role in “Transition of Care” for patients. The day will round off with a site tour.

Time	Topic	Speaker
Venue: St Andrew's Community Hospital		
0830–0900	Registration	
0900–0945	Lecture	Edward GOH, Consultant, Medical Services; Alison SIM, Director, Nursing Services, St Andrew's Community Hospital
0945–1000	Q&A	
1000–1100	Tour of SACH Facilities*	
1100–1130	Tea Break and Debrief	

*Tour Route: 1) Dementia Ward; 2) Ward 65; 3) Centre for Independent Living; 4) Day Rehabilitation Centre

Schedule for Oral Presentation

Time	Abstract No.	Title	Presenter
3 November 2016, Thursday, Changi General Hospital, Training Centre, Lecture Room			
Category: Allied Health			
9:00 AM	EHASM2016-Oral-AH01	Bonebridge implant versus cochlear implant in the treatment of single-sided deafness	Mr Lee Lock Hey Steven, Clinical Support Services, CGH
9:10 AM	EHASM2016-Oral-AH02	Effectiveness of pharmacist-led medication review services on diabetes mellitus control in primary care patients	Ms Bandy Goh, Pharmacy, SingHealth Polyclinics
9:20 AM	EHASM2016-Oral-AH03	The use of two tools to assess nutrition risk in the surgical intensive care unit: a pilot study	Ms Joanna Tan, Dietetic and Food Services, CGH
9:30 AM	EHASM2016-Oral-AH04	Impact of pharmacists' involvement on dose optimisation and detection of adverse drug events in patients with rheumatoid arthritis	Ms Dinh Vinh Thuc Uyen, Pharmacy, CGH
9:40 AM	EHASM2016-Oral-AH05	Comparison of fat-to-lesion strain ratio and gland-to-lesion strain ratio in identifying indeterminate and suspicious breast lesions using controlled precompression technique	Ms Charlyn Chee, Radiography, CGH
9:50 AM	EHASM2016-Oral-AH06	A review of the shoulder radiographic projection protocols in the accident and emergency department	Ms Lee Wanchin, Radiography, CGH
10:00 AM	Tea break		
10:30 AM	EHASM2016-Oral-AH07	Profiles of participants with impaired fasting blood glucose levels from the Eastern Community Health Outreach programme	Dr Chow Wai Leng, Health Services Research, EHA
10:40 AM	EHASM2016-Oral-AH08	Survival analysis and implantable cardioverter defibrillator shock therapy in patients with primary versus secondary prevention indication	Ms Lisa Teo, Clinical Measurement Unit, CGH
10:50 AM	EHASM2016-Oral-AH09	Direct determination of methicillin-resistant <i>Staphylococcus aureus</i> from blood culture: faster, better, cheaper?	Ms Jolene Ong, Laboratory Medicine, CGH
11:00 AM	EHASM2016-Oral-AH10	Predictors of postoperative day one ambulation in a hip fracture population	Ms Tan Shumei, Rehabilitative Services, CGH
11:10 AM	EHASM2016-Oral-AH11	Effects of visual feedback and motor imagery on reducing compensatory movement strategies in hemiplegic subjects: a pilot randomised controlled trial	Ms Jasmine Koh, Rehabilitative Services, CGH
11:20 AM	EHASM2016-Oral-AH12	Evaluating the role of caregiver support groups in caring for persons with dementia: a Singapore context	Dr Annabelle Chow, Clinical Support Services, CGH
Time	Abstract No.	Title	Presenter
3 November 2016, Thursday, Changi General Hospital, Centre For Innovation (INSPIRE room)			
Category: Medical			
9:00 AM	EHASM2016-Oral-M01	A randomised controlled trial comparing single-shot adductor canal block with local infiltration analgesia for postoperative analgesia after total knee arthroplasty	Dr Tong Qian Jun, Anaesthesia and Surgical Intensive Care, CGH
9:10 AM	EHASM2016-Oral-M02	'Diagnostic' blood loss in ICU contributes to anaemia: a call for more judicious bloodtaking protocols in local ICUs	Mr Amrish Soundararajan, Yong Loo Lin School of Medicine, NUS
9:20 AM	EHASM2016-Oral-M03	Use of zero fluoroscopy for electrophysiological intervention: the zerox pilot study	Dr Audry Lee, Cardiology, CGH
9:30 AM	EHASM2016-Oral-M04	Return to sports and patient satisfaction after arthroscopic Bankart repair: a single-institution experience	Mr Tan Yeow Boon, Orthopaedic Surgery, CGH
9:40 AM	EHASM2016-Oral-M05	Accuracy of computed tomography and postural test compared to adrenal vein sampling in subtyping of patients with primary hyperaldosteronism	Dr Thant Aye Aye, General Medicine, CGH
9:50 AM	EHASM2016-Oral-M06	Medical certification: impact on a public primary healthcare system	Dr Ng Chee Chin David, SingHealth Polyclinics – Queenstown
10:00 AM	Tea break		
10:30 AM	EHASM2016-Oral-M07	Significant discordance between cardiac magnetic resonance imaging and echocardiography in the assessment of right ventricular function	Dr Huang Zijuan, Cardiology, CGH
10:40 AM	EHASM2016-Oral-M08	Accuracy and clinical outcomes of coronary computed tomography angiography for patients with suspected coronary artery disease: a single-centre study	Dr Charlene Liew, Diagnostic Radiology, CGH
10:50 AM	EHASM2016-Oral-M09	Screening for hearing loss in geriatric inpatients: how are we doing?	Dr Subramaniam Nagasayi, Geriatric Medicine, CGH
11:00 AM	EHASM2016-Oral-M10	Effectiveness of tonsillectomy as a single surgical procedure in the management of obstructive sleep apnoea in adults: a prospective study from 2007 to 2014	Dr Loraine Yeo, Otorhinolaryngology-Head and Neck Surgery, CGH
11:10 AM	EHASM2016-Oral-M11	Incidence of failed spinal anaesthesia and associated risk factors	Dr Lim Yean Chin, Anaesthesia and Surgical Intensive Care, CGH
11:20 AM	EHASM2016-Oral-M12	Patients with hypothyroidism: factors associated with their thyroid status and levothyroxine replacement	Dr Reena Subramanian, Research, SingHealth Polyclinics
11:30 AM	EHASM2016-Oral-M13	A randomised controlled trial comparing PEAK PlasmaBlade® and monopolar electrocautery tonsillectomy in adults	Dr Sanjay Ganhasan, Otorhinolaryngology-Head and Neck Surgery, CGH
11:40 AM	EHASM2016-Oral-M14	Survival analysis in patients with and without implantable cardioverter defibrillator for primary prevention indication: a single-centre multiethnic experience	Dr Mon Aye Aye, Cardiology, CGH

Time	Abstract No.	Title	Presenter
<i>3 November 2016, Thursday, Changi General Hospital, Training Centre, Auditorium</i>			
Category: Nursing			
9:00 AM	EHASM2016-Oral-N01	Evaluating the effectiveness of a clinical pharmacology record on graduating nursing students: an exploratory approach	Ms Nur Syahida Abdul Rahim, Nursing Education, CGH
9:10 AM	EHASM2016-Oral-N02	Barriers to the uptake of primary prevention implantable cardioverter defibrillator in multiethnic population: a single-centre experience	Ms Him Ai Ling, Cardiology, CGH
9:20 AM	EHASM2016-Oral-N03	Comparing two modalities of nursing professional training on osteoporosis management: a randomised controlled trial	Ms Ang Kim Wai, SingHealth Polyclinics – Tampines
9:30 AM	EHASM2016-Oral-N04	A randomised trial of probiotics to reduce the duration of vancomycin-resistant enterococci carriage	Ms Li Jie, Infection Control, CGH
9:40 AM	EHASM2016-Oral-N05	A qualitative research study on patients with newly diagnosed type 2 diabetes mellitus: how do they manage their diet?	Ms Hamidah Karim, Nursing, SingHealth Polyclinics
9:50 AM	EHASM2016-Oral-N06	Care transition for heart failure patients to primary care: the Changi General Hospital experience	Ms Parvinder Kaur, Case Management, CGH
10:00 AM	Tea break		
10:30 AM	EHASM2016-Oral-N07	A new case management model for patients at risk of readmission at Changi General Hospital	Ms Ng Chia Chi, Case Management, CGH
10:40 AM	EHASM2016-Oral-N08	The effect of educative interventions on enhancing nurses' knowledge in prevention and management of pressure ulcer	Ms Nadia Hanim Abdul Shukur, Nursing Education, CGH
10:50 AM	EHASM2016-Oral-N09	Inpatient wards nurses' readiness in providing caregiver training on tracheostomy care and management at home	Ms Lim Jia Yan, Nursing, CGH
11:00 AM	EHASM2016-Oral-N10	Evaluation of zero-heat-flux thermometry as an alternative to rectal thermometry for measurement of core temperature in critically ill neurosurgical patients	Ms Wee Jingyi Adelia, Nursing, CGH
11:10 AM	EHASM2016-Oral-N11	Patient aggression experienced by staff in a general hospital of Singapore	Ms Jiang Li Na, Advanced Practice Nurse Development/Specialty Nursing, CGH

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH01

Bonebridge implant versus cochlear implant in the treatment of single-sided deafness

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INTRODUCTION Single-sided deafness (SSD) is a condition in which one ear is deaf and the other is normal or has near normal hearing. One option to treat SSD is bonebridge (BB) implantation on the deaf side so that sounds from the deaf side are routed to the better hearing ear via transcranial bone conduction. Another option is cochlear implantation (CI), which restores hearing on the deaf ear electrically. This study aimed to evaluate the effectiveness of BB implantation versus CI in the treatment of SSD.

METHODS A total of 12 patients with SSD participated in the study – six patients were treated with BB implantation and six with CI. The patients were evaluated using an English-language open-set speech perception test. The speech signal was presented to the implanted ear and masking noise was delivered to the better hearing ear. Patients were also asked to complete two self-reported questionnaires: Abbreviated

Profile of Hearing Aid Benefit (APHAB), which evaluates communication benefit; and Speech Spatial Qualities (SSQ), which evaluates spatial hearing and localisation benefits.

RESULTS At 12 months post implantation, the average speech scores in noise for the BB and CI groups were 70.8% and 60.2%, respectively. From the self-reported questionnaires, the average benefit scores for the BB and CI groups using APHAB were 29.2% and 15.2%, respectively, while those using SSQ were 74.2% and 56.1%, respectively.

CONCLUSION Preliminary results showed that BB implantation appeared to be more effective than CI in both speech understanding in noise and self-reported measures after a 12-month period. However, the results may be markedly different as the study progresses, with more time given to the CI patients to acclimise to novel sounds elicited by electrical stimulation.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH02

Effectiveness of pharmacist-led medication review services on diabetes mellitus control in primary care patients

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¹Pharmacy, SingHealth Polyclinics, Singapore

INTRODUCTION We aimed to determine whether pharmacist-led medication review services (MRS) can be an effective tool in improving diabetic patients' clinical outcomes and self-care.

METHODS Patients with haemoglobin A1c (HbA1c) level above 7% were recruited at the pharmacies of five polyclinics. These patients were randomised into control and intervention groups. Patients who met the recruitment criteria and had given their consent to participate in the study were administered the validated 16-item Diabetes Self-Management Questionnaire (DSMQ) during the first and follow-up visits. Patients in the intervention group were administered the DSMQ prior to medication review conducted by the pharmacist during their first visit and again during the follow-up session. The interval between the first and follow-up visits was at least eight weeks. HbA1c readings

and DSMQ results were subsequently analysed using chi-square test, and Student's paired and unpaired *t*-tests. A calculated sample size of 128 patients was required for the study to be powered at 80%, with a 0.5% margin of error.

RESULTS A total of 301 patients were recruited and 220 of them completed the follow-up session. The average duration between the first and follow-up visits was 11.4 ± 2.3 weeks. This study showed that pharmacist-led MRS improved patients' HbA1c level by an average of 0.63% (95% CI 0.27%–0.99%; *p* < 0.05). MRS was also found to improve the patients' DSMQ scale score by an average of 0.45 (95% CI 0.22–0.68; *p* < 0.001).

CONCLUSION Pharmacist-led MRS is an effective tool for improving patients' diabetic control and self-care.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH03

The use of two tools to assess nutrition risk in the surgical intensive care unit: a pilot study

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INTRODUCTION This study aimed to: (a) characterise the nutritional risk of critically ill patients admitted to Changi General Hospital's surgical intensive care unit (SICU); and (b) test for the relationship between scores obtained using two nutritional risk assessment tools: the modified Nutrition Risk in Critically ill (NUTRIC) score and subjective global assessment (SGA).

METHODS A convenience sample of patients admitted to SICU from December 2015 to May 2016 was used. Patients were assessed using SGA and the modified NUTRIC score. The NUTRIC score was calculated using age, number of comorbidities, duration from hospital to SICU admission, and Acute Physiology and Chronic Health Evaluation (APACHE) II and Sequential Organ Failure Assessment (SOFA) scores at admission. Demographic data and SICU length of stay (LOS) records were also collected.

RESULTS 54 eligible SICU patients were recruited and 32 (59%) were

deemed to be at nutritional risk or malnourished by at least one tool. Both assessment tools had negative moderate correlation ($r = 0.31$, $p = 0.022$) using Spearman's correlation. Regardless of the tool used, patients at nutritional risk – compared to those who were not – were older (67.2 ± 13.9 years vs. 54.1 ± 16.3 years; $p = 0.003$), had higher APACHE II ($20.0 [16.0–24.8]$ vs. $12.5 [9.0–17.0]$; $p < 0.001$) and SOFA ($7.5 [3.5–9.0]$ vs. $3.5 [3.0–5.5]$; $p = 0.001$) scores, had longer SICU LOS ($7.0 [4.3–14.3]$ days vs. $5.5 [4.0–9.3]$ days; $p = 0.335$) and higher 30-day mortality ($8 [25\%]$ vs. $0 [0\%]$; $p = 0.016$).

CONCLUSION Traditional screening and assessment tools can identify patients at nutritional risk in a critical care setting. Used together, the SGA and NUTRIC score showed that some patients would benefit from extra protein-energy provision. As such, consideration of nutritional status may be of value in mortality prognostication for SICU patients.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH04

Impact of pharmacists' involvement on dose optimisation and detection of adverse drug events in patients with rheumatoid arthritis

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INTRODUCTION Approximately 25% of rheumatoid arthritis (RA) patients may require a withdrawal of nonbiologic disease-modifying antirheumatic drug (nb-DMARD) therapy due to adverse drug events (ADEs). The American College of Rheumatology (ACR) recommends regular monitoring of RA patients newly initiated on nb-DMARD therapy for ADEs, especially in the first six months of therapy. Careful dose titration of nb-DMARDs by healthcare professionals may be useful in the prevention and/or early detection of ADEs. This study investigated the impact of pharmacists' involvement on dose optimisation of nb-DMARDs and the detection of ADEs among RA patients.

METHODS We performed a retrospective review of casenotes and medication records of RA patients in the 12 months prior to and 24 months following the launch of a pharmacist-led rheumatology clinic (i.e. pre- and post-groups). We compared the degree of optimisation of nb-DMARD doses (to meet therapeutic targets as determined by patient-clinician considerations), compliance to ACR recommendations on nb-DMARD monitoring, and the incidence and charac-

teristics of nb-DMARD-associated ADEs among patients in the pre- and post-groups.

RESULTS 76 patients were reviewed. More patients in the post-group achieved nb-DMARD dose optimisation within a year of initiation of therapy (70.6% vs. 47.1%; $p < 0.05$). Compliance to ACR recommendations on nb-DMARD monitoring was significantly higher in the post-group (72.7% vs. 44.1%; $p < 0.05$). 17 (22.4%) patients experienced withdrawal of nb-DMARD therapy within a year of initiation due to ADEs. The most common ADEs were gastrointestinal (29.4%), dermatological (17.6%) and hepatic (17.6%) in nature, most of which being mild in severity. Pharmacists more frequently identified nb-DMARD-associated ADEs (post-group 28.9%) compared to physicians (pre-group 15.8%).

CONCLUSION Pharmacists' involvement contributed to an improvement in nb-DMARD dose optimisation, compliance to ACR guidelines on monitoring and detection of drug-related ADEs. Overall tolerance toward nb-DMARDs in our study population appeared comparable to that in literature reports.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH05

Comparison of fat-to-lesion strain ratio and gland-to-lesion strain ratio in identifying indeterminate and suspicious breast lesions using controlled precompression technique

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INTRODUCTION The objectives of this study were to: (a) compare the diagnostic performance of fat-to-lesion strain ratio (FLR) and gland-to-lesion strain ratio (GLR) in identifying indeterminate or suspicious breast lesions using the controlled precompression technique; and (b) determine if the technique improves the reproducibility of FLR and GLR measurement.

METHODS A total of 53 lesions in 39 consecutive patients who had scheduled core biopsy or excision surgery based on breast ultrasonographic findings were included in the study. Each lesion was scanned using controlled precompression technique by two sonographers independently. The FLR and GLR of the lesion were measured independently. The sensitivity, specificity, negative predictive value, positive predictive value and accuracy were calculated to determine diagnostic performance against histology. Inter-observer reliability between the sonographers was assessed with intraclass correlation (ICC).

RESULTS Among the 53 lesions analysed, 40 were malignant and 13 were benign. Both FLR and GLR were significantly higher in the malignant lesions than in the benign lesions ($p = 0.003$ and $p = 0.030$, respectively). FLR yielded higher accuracy and specificity compared to GLR (accuracy: 79.2% vs. 78.4%; specificity: 87.5% vs. 72.5%). With controlled precompression $< 10\%$ during elastography, the inter-observer agreement was excellent for FLR measurements (ICC value 0.853, 95% CI 0.738–0.920) and GLR measurements (ICC value 0.779, 95% CI 0.619–0.877).

CONCLUSION FLR performed better than GLR in the detection of breast malignancy, and thus fatty tissue is better as the reference normal tissue than glandular tissue in the calculation of strain ratio for malignant breast tumour. Keeping precompression to $< 10\%$ will enable different operators to acquire similar elastogram with reproducible FLR and GLR readings.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH06

A review of the shoulder radiographic projection protocols in the accident and emergency department

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INTRODUCTION The objective of this study was to evaluate the diagnostic reporting accuracy of anteroposterior (AP) and axial/velpeau projections of the shoulder performed in the Accident and Emergency (A&E) Department, with the aim of reducing the need for Y-scapula projections.

METHODS We carried out a retrospective review of 50 shoulder radiographic requests for a combination of three projections (AP, Y-scapula and axial/velpeau), performed in the A&E Department in May 2015. The inclusion criteria were: clinical history of direct shoulder trauma; investigation for shoulder fractures or dislocations; and patients who were particularly uncooperative or under spinal nursing. Provided with only the AP and axial/velpeau projections from the original combination of three projections performed, a consultant radiologist from the Department of Radiology re-evaluated the diagnostic accuracy and confidence of the two projections via a questionnaire.

RESULTS The AP and axial/velpeau projections of 42 out of the 50 (84%) radiographic requests evaluated were established to have strong diagnostic accuracy. However, the remaining 8 (16%) requests were deemed unsuitable primarily due to poor patient positioning or radiographic quality, necessitating further radiographic assessment using Y-scapula projection.

CONCLUSION This review concluded that a two-projection (AP and axial/velpeau) rather than a three-projection (AP, Y-scapula and axial/velpeau) shoulder radiographic request is adequate in obtaining a satisfactory radiographic diagnosis in the majority of cases being evaluated for shoulder trauma or in patients whose positioning for Y-scapula projection posed challenges. Performing axial/velpeau instead of the Y-scapula projection is also particularly useful in A&E situations, where it may be difficult to achieve optimal positioning of patients due to shoulder pain and discomfort, with the aim of improving overall diagnostic accuracy.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH07

Profiles of participants with impaired fasting blood glucose levels from the Eastern Community Health Outreach programme

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INTRODUCTION This study sought to understand the potential factors associated with impaired fasting blood glucose (IFG) levels (6.1–6.9 mmol/L) among Eastern Community Health Outreach (ECHO) programme participants.

METHODS Residents aged ≥ 40 years with no self-reported chronic diseases were eligible for participation in the ECHO programme. Our analysis involved a closed cohort of 648 participants who participated in the programme in Tampines for four consecutive years (2012 to 2015). Using data from baseline screening and Year 1 follow-up (Y1), we analysed the prevalence and incidence rates of IFG and factors associated with a change in glucose status (e.g. family history of diabetes mellitus [DM], hypertension, and changes in body mass index, dyslipidaemia status and percentage body weight).

RESULTS The prevalence of IFG across two years are as follows: baseline 5.6% (36/648); Y1 4.1% (27/648). Five patients developed

DM in Y1. The prevalence of IFG was highest among patients aged 50–59 years (6.6%) and ≥ 60 years (6.1%) at baseline, and among those ≥ 60 years (5.1%) at Y1. Among patients who were normal at baseline, 2.2% developed IFG. 47.2% of patients with IFG at baseline remained afflicted, while 52.8% of those with IFG at baseline returned to normal at Y1. In this latter group, a greater proportion was aged ≥ 60 years, male with at least secondary school education, had no family history of DM, stopped smoking and lost $\geq 3\%$ of their body weight. Among those who developed IFG at Y1, a greater proportion was aged ≥ 60 years, male with at least secondary school education, had a family history of DM, started smoking and gained $\geq 3\%$ of their body weight.

CONCLUSION The prevalence of IFG was highest among participants aged ≥ 60 years living in Tampines. Weight management and anti-smoking efforts could influence the prevalence of IFG locally.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH08

Survival analysis and implantable cardioverter defibrillator shock therapy in patients with primary versus secondary prevention indication

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INTRODUCTION Implantable cardioverter defibrillators (ICDs) are linked to improved survival in primary and secondary prevention populations. There is, however, limited data on the impact of ICDs in primary versus secondary prevention in the Asian population.

METHODS This retrospective study analysed consecutive patients who received ICDs either for primary or secondary prevention from September 2002 to December 2015 at Changi General Hospital. Primary endpoints are all-cause death and ICD shock.

RESULTS 278 patients received ICDs, of whom 192 (69.3%) were in the primary prevention group. This group, compared with the secondary prevention group, had significantly lower mean left ventricular systolic function ($22.7\% \pm 9.1\%$ vs. $32.1\% \pm 15.8\%$; $p < 0.001$), and more male (86.5% vs. 70.6%; $p = 0.002$), diabetics (53.1% vs. 35.3%; $p = 0.006$) and ischaemic heart disease patients (75.9% vs. 58.5%; $p = 0.001$). Mean cumulative survival was similar

in both groups (primary: 9.9 ± 0.9 years, 95% CI 8.0–11.7; secondary: 8.5 ± 0.4 years, 95% CI 7.6–9.3; $p = 0.073$). Time to appropriate ICD shock was significant longer in the primary vs. secondary prevention group (12.6 ± 0.3 years, 95% CI 12.1–13.1 vs. 7.8 ± 0.5 years, 95% CI 6.9–8.7; $p = 0.003$). Independent predictors of appropriate ICD shock were primary prevention indication (hazard ratio [HR] 0.18, 95% CI 0.06–0.52; $p = 0.002$) and absence of atrial fibrillation (AF) (HR 0.12, 95% CI 0.03–0.40; $p = 0.001$). Conversely, time to inappropriate ICD shock was similar in both groups ($p = 0.204$). The commonest aetiology for inappropriate shock in both groups was AF.

CONCLUSION In this long-term follow-up study, survival in both groups was similar. The secondary prevention group tends to receive significant appropriate ICD shock. AF was the commonest cause of inappropriate ICD shock and absence of AF was an independent predictor of appropriate shock.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH09

Direct determination of methicillin-resistant *Staphylococcus aureus* from blood culture: faster, better, cheaper?

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INTRODUCTION Rapid and appropriate antibiotic therapy for blood-stream infections improves mortality in severe sepsis. Direct disc susceptibility testing for determination of methicillin-resistant *Staphylococcus aureus* (MRSA) from blood culture requires the use of an additional culture medium (Mueller-Hinton [MH]-cefoxitin). In this study, we evaluated an alternative testing option using the existing blood agar plate (BAP), and measured test accuracy, technologist time and cost.

METHODS Positive blood culture vials with Gram-positive cocci in clusters were routinely plated on BAP, with the addition of a cefoxitin disc on the inoculum (BAP-cefoxitin) instead of conventional cefoxitin testing on MH agar. Following 16–18 hours' incubation, the zone of inhibition to cefoxitin was measured to determine preliminary methicillin susceptibility. Results of BAP-cefoxitin were compared to standard susceptibility testing by Vitek™ system (P580). The technologist time required to perform BAP-cefoxitin and conventional MH-cefoxitin was calculated by taking 21 measurements. The costs for additional media required to perform MH-cefoxitin was also calculated.

RESULTS Data for 1,744 blood culture vials positive for staphylococci in 2015 (coagulase-negative staphylococci: n = 1,142; methicillin-susceptible *S. aureus*: n = 349; MRSA: n = 253) was analysed. When the results of the 602 *S. aureus* were compared to those obtained by P580-testing, the BAP-cefoxitin method correctly identified all 253 methicillin-resistant and 346 methicillin-susceptible staphylococci. Conventional MH-cefoxitin takes an average of 78 seconds to complete, whereas direct BAP-cefoxitin takes an average of 31 seconds. This translated to an annual savings of 1,366 minutes. The annual excess cost of using MH-cefoxitin media, compared with BAP-cefoxitin alone, was \$1,256.

CONCLUSION BAP-cefoxitin provides accurate early reporting of methicillin resistance in *S. aureus*, with savings in technologist time and media costs compared to the conventional MH-cefoxitin method.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH10

Predictors of postoperative day one ambulation in a hip fracture population

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INTRODUCTION Early mobilisation within 24 hours is recommended unequivocally across all international clinical guidelines for patients following hip fracture surgery. Currently, there is no local study analysing predictive factors of Postoperative Day 1 (POD1) ambulation. We hypothesised that identified predictors will enable clinicians to advise patients and families on attaining postoperative mobilisation and their subsequent rehabilitative goals. This study aimed to: (a) review the current status of patients with hip fracture who attained POD1 ambulation in Changi General Hospital; and (b) analyse predictors of POD1 ambulation.

METHODS In this retrospective study, 51 patients aged 50–100 years who were admitted between April and May 2016, had undergone hip fracture surgery and were allowed weight-bearing on POD1 were included. Clinical records of these patients were traced and their POD1 ambulation performance was retrieved. Biometric data, premorbid function, medical history and injury factors were also obtained.

RESULTS 25 (49%) patients achieved POD1 ambulation. Univariate analysis showed that Modified Barthel Index Gait Score of 15 (p = 0.024), Abbreviated Mental Test (AMT) score ≥ 7 (p = 0.002) and POD1 haemoglobin ≥ 10 g/dL (p = 0.032) were significant predictive factors of POD1 ambulation. Further logistic regression analysis indicated that AMT ≥ 7 (p = 0.005) and POD1 haemoglobin ≥ 10 g/dL (p = 0.018) remained significant, predicting a 13-times and six-times higher likelihood of patients ambulating on POD1 respectively.

CONCLUSION This study presented POD1 ambulation rates, setting the benchmark for future standards. This model reflects an overall prediction accuracy of 81.3%, which directs more accurate clinical care and resource allocation for our patients. Results preliminarily demonstrated an established association between postoperative haemoglobin and POD1 ambulation. Cognition had the greatest influence on POD1 mobilisation, suggesting the need to understand the impact of dementia and/or delirium on rehabilitation.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH11

Effects of visual feedback and motor imagery on reducing compensatory movement strategies in hemiplegic subjects: a pilot randomised controlled trial

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INTRODUCTION This study aimed to examine the effects of visual feedback and motor imagery on reducing compensatory movements and energy consumption in stroke patients.

METHODS An assessor-blinded stratified randomised controlled trial design was used. Participants with post-stroke hemiplegia were recruited. Their functional statuses were assessed before and after treatment using observational movement analysis (OMA), volume of oxygen consumption (VO₂C) during functional activities and Fugl-Meyer (FM) assessment of lower extremity performance. The experimental group received ten standard physiotherapy sessions along with visual feedback using a video depicting normal movement sequence and motor imagery conducted by the attending physiotherapist. Participants were asked to practise motor imagery during the day and self-report on the number of practice sessions. The control group received only ten standard physiotherapy sessions. The control and intervention groups were compared using the Kruskal-Wallis test for

OMA, VO₂C and FM, while other continuous variables were compared using Student's *t*-test.

RESULTS Median \pm standard deviation OMA, VO₂C and FM of the first treatment session from baseline was 3.0 ± 1.07 , -1.2 ± 1.14 L/min and 8.0 ± 3.94 , respectively, in the intervention group, and 1.0 ± 0.92 , 0.0 ± 1.42 L/min and 2.0 ± 3.94 , respectively, in the control group. The treatment group showed significant improvements in reduced VO₂C, increased FM and increased OMA (all $p < 0.0001$) over the control group.

CONCLUSION Visual feedback and motor imagery combined with standard physiotherapy could be effective in reducing abnormal compensatory movement strategies and, therefore, reduces energy requirements during functional activities as measured by VO₂C. The benefits may not only be limited to functional improvements, but also extended to increased participation in the rehabilitation process, elevated mood and an increase in motivation.

CATEGORY: ALLIED HEALTH

EHASM2016-ORAL-AH12

Evaluating the role of caregiver support groups in caring for persons with dementia: a Singapore context

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INTRODUCTION This study examined whether a support group could help to reduce caregivers' stress levels and increase their ability to provide care to persons with dementia.

METHODS Participants of this study were family members of patients with dementia, who were followed up by a psychiatrist or geriatrician in Changi General Hospital. A caregiver support group convened weekly and focused on providing psychoeducational and emotional support. The Stress Measure Appraisal and Zarit Burden Scale were administered at the beginning and end of the support group to ascertain

differences in stress levels, emotional coping capacity and ability to provide care.

RESULTS Our results indicated reductions in stress levels, sense of threat and centrality (defined as a perception that looking after persons with dementia is central to the lives of their caregivers). The participants also perceived an increase in resources. In addition, the perception that dementia is a challenge increased.

CONCLUSION Our study showed that the caregiver support group is efficacious in supporting family members who are looking after persons with dementia.

CATEGORY: MEDICAL

EHASM2016-ORAL-M01

A randomised controlled trial comparing single-shot adductor canal block with local infiltration analgesia for postoperative analgesia after total knee arthroplasty

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INTRODUCTION This is the first prospective randomised controlled study comparing adductor canal block (ACB) with local infiltration analgesia (LIA) after total knee arthroplasty (TKA). We hypothesised that ACB was superior to LIA in terms of providing analgesia while still enabling early postoperative rehabilitation.

METHODS 40 patients undergoing primary TKA under single-shot spinal anaesthesia were prospectively randomised from January 2014 to October 2015. The LIA group received local infiltration of ropivacaine 150 mg, ketorolac 30 mg, morphine 10 mg and adrenaline 200 mcg, totalling a volume of 75 mL administered intraoperatively by the surgeon. The ACB group received: (a) local infiltration consisting of adrenaline 200 mcg in a total volume of 75 mL administered by the surgeon and intravenous ketorolac 30 mg administered intraoperatively by the attending anaesthetist; and (b) an ACB

with 30 mL of 0.5% ropivacaine at the end of surgery administered by one of the study investigators. The primary endpoint was total morphine consumption in the first 24 hours. Secondary outcomes included pain scores, quadriceps strength, ability to mobilise and length of hospital stay.

RESULTS There was no significant difference between the two groups in the primary outcome. The mean \pm standard deviation of 24-hour morphine consumption was 10.5 ± 10.6 mg in the ACB group and 10.0 ± 10.1 mg in the LIA group. There were also no differences in the secondary outcomes.

CONCLUSION ACB and LIA were comparable in terms of analgesia efficacy, as measured by postoperative morphine consumption in TKA patients. The synergy in combining both techniques to further enhance postoperative analgesia should be studied.

CATEGORY: MEDICAL

EHASM2016-ORAL-M02

'Diagnostic' blood loss in ICU contributes to anaemia: a call for more judicious bloodtaking protocols in local ICUs

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INTRODUCTION Routine bloodtaking is commonplace in local intensive care units (ICUs). This study examined how 'diagnostic' blood loss impacts haemoglobin (Hb) and patient outcomes.

METHODS Blood volumes drawn from patients admitted to Changi General Hospital's Medical ICU in April 2016 were recorded, either for seven days from ICU admission or until discharge from ICU, whichever earlier. Short-stay (< 1 day) patients were excluded. Hb and haematocrit levels were trended; age, red-cell transfusions (PCTs) received, APACHE II score, and 14- and 120-day patient outcomes following ICU admission were recorded.

RESULTS 44 patients (median [IQR] age: 67.2 [16.7]) years were studied. 3 (6.8%) had haemorrhage-related diagnoses. Median time to lowest Hb and haematocrit levels was three days. Median (IQR) volume of 131 (76.0) mL and 127 (76.0) mL of blood was drawn in the time to lowest Hb and haematocrit, respectively. Significant correlation was seen between volume drawn and maximum

drop in Hb ($r = 0.315$; $p = 0.037$) and haematocrit ($r = 0.765$; $p < 0.001$). Total volume (mean 175 ± 74.7 mL) and final drop in Hb or haematocrit were not significantly correlated, possibly due to transfusions. 15 (34.1%) patients received an average of two PCTs each (56.7% of transfusions were done at threshold of $Hb < 7$ g/dL). Differences in volumes drawn among patients who remained inpatient (70.5%), were discharged (18.2%) or died (11.4%) at 14 days following ICU admission were not significant. At 120 days after admission, the time to first adverse event was inversely correlated with APACHE II score ($r = -0.454$; $p = 0.044$), but not with volumes of blood drawn.

CONCLUSION Blood volumes drawn in ICU convincingly correlated with and likely contributed to downtrending Hb and haematocrit, underscoring a need for more judicious bloodtaking. While our results did not reveal ramifications on patients' outcomes, further studies with larger cohorts may confirm this.

CATEGORY: MEDICAL

EHASM2016-ORAL-M03

Use of zero fluoroscopy for electrophysiological intervention: the zerox pilot study

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INTRODUCTION Fluoroscopy has been routinely used to guide catheters during electrophysiological procedures. However, 3D electroanatomical mapping allows us to avoid radiation from fluoroscopy. We explored the feasibility of zero fluoroscopy in two low-volume centres.

METHODS 45 consecutive patients were recruited. Four operators used EnSite NavX™, CARTO 3® or CARTO 3® with stereotaxis. Data including procedural times was collected. Subgroup analysis comparing the supraventricular tachycardia (SVT)/cavo-tricuspid isthmus (CTI) ablation group (n = 36) with matched controls (without use of electroanatomical systems) (n = 30) was also performed.

RESULTS 18 (40%) patients received atrioventricular nodal reentry tachycardia (AVNRT), 11 (24%) accessory pathway; 7 (16%) CTI, 5 (11%) ventricular tachycardia (VT) and 1 (2%) atrial tachycardia (AT) ablations; 3 (7%) patients had diagnostic studies. Zero fluoroscopy was achieved in 93% of patients, with three unsuccessful cases: VT ablation required fluoroscopy to register stereotaxis;

navigation of a coronary sinus stenosis required fluoroscopy; and unsuccessful ablation of a right free wall accessory pathway required fluoroscopy despite electroanatomical and fluoroscopic guidance. In the SVT/CTI subgroup, zero fluoroscopy was achieved for 35 patients. The average fluoroscopy time and dose area product were significantly different between the SVT/CTI and control subgroups (0.2 ± 1.2 min vs. 25.3 ± 17.4 min; 180 mGy/cm^2 vs. $21,855 \text{ mGy/cm}^2$, respectively). Total procedural time, time for catheter positioning and radiofrequency time were not significantly different. We found a significantly shorter total ablation time and fewer number of radiofrequency lesions in the zero fluoroscopy group (25.5 ± 25.7 min vs. 60.5 ± 43.1 min; $p < 0.01$; 8.6 ± 7.4 vs. 18.0 ± 16.3 ; $p < 0.01$, respectively).

CONCLUSION Zero fluoroscopy is feasible even with complex ablations in low-volume centres. The use of zero fluoroscopy and electroanatomical mapping did not increase procedural time but instead reduced total ablation time.

CATEGORY: MEDICAL

EHASM2016-ORAL-M04

Return to sports and patient satisfaction after arthroscopic Bankart repair: a single-institution experience

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INTRODUCTION Not all patients who undergo arthroscopic Bankart repair for recurrent shoulder dislocation return to sports. This study aimed to describe patients' experience with arthroscopic Bankart repair and their functional outcome.

METHODS 107 patients who underwent surgery in 2008–2013 with a minimum of two years follow-up were reviewed by an independent observer. 82 patients consented to interview and scoring with the Oxford Instability Score (OIS) and Simple Shoulder Test.

RESULTS The mean age at first dislocation was 19.4 ± 3.4 (12.0–31.0) years. Elapsed time from first dislocation to surgery was 2.6 ± 3.0 (0.1–15.3) years, while duration of follow-up was 3.6 ± 1.3 (2.2–8.3) years. Out of 82 patients, 42 (51.2%) played overhead or contact sports and 44 (53.7%) played competitive sports before injury. 8 (9.8%) reported recurrence of dislocation, and 5 (6.1%) underwent revision surgery. 23 (28.0%) reported mild instability after surgery. 48 (58.5%) returned to sports after surgery. 74 (90.2%) were satisfied

with their surgery, and 79 (96.3%) were willing to undergo the surgery again. Recurrence of dislocation was not associated with atraumatic dislocation, Hill-Sachs lesion, ligamentous laxity, playing contact/overhead sports, bony Bankart lesion, SLAP lesion, number of dislocations or age at first dislocation, return to sports, patient satisfaction or playing competitive sports before injury, but with operative time (86.3 ± 44.8 min vs. 63.3 ± 28.2 min; $p < 0.043$). 74 (90.2%) patients had a two-year 'good/excellent' OIS, which was not associated with number of dislocations or age at first dislocation, return to sports, ligamentous laxity, operative time, absence of recurrence or playing competitive sports before surgery, but with self-reported stability after surgery ($p < 0.036$), satisfaction with surgery ($p < 0.028$) and willingness to undergo surgery again ($p < 0.024$).

CONCLUSION Arthroscopic Bankart repair produces good functional outcome and high patient satisfaction, even though not all patients return to sports.

CATEGORY: MEDICAL

EHASM2016-ORAL-M05

Accuracy of computed tomography and postural test compared to adrenal vein sampling in subtyping of patients with primary hyperaldosteronism

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INTRODUCTION Primary hyperaldosteronism leads to secondary hypertension, due to either unilateral aldosterone-producing adenoma (APA) or bilateral adrenal hyperplasia (BAH). Adrenal vein sampling (AVS) is the gold standard test to differentiate APA from BAH, but it is technically challenging and invasive. We assessed the accuracy of computed tomography (CT) and postural test in subtyping patients.

METHODS We conducted a retrospective study of 50 patients with confirmed primary aldosteronism from 2000 to 2016. Inclusion criteria were patients who had been subtyped into APA or BAH, based on either successful AVS or adrenalectomy (if no conclusive AVS data was available).

RESULTS 35 patients with primary aldosteronism underwent successful bilateral AVS – 27 had APA and eight had BAH. 15 patients successfully underwent adrenalectomy without AVS or after a failed

AVS. Among those with successful AVS, 24 had a unilateral abnormal adrenal concordant to the side of the lesion. Two patients had a nodule on the contralateral side, while one had unilateral hypersecretion with bilateral abnormal adrenals seen on CT. In the eight patients with bilateral disease, CT incorrectly identified a single abnormal adrenal gland in seven patients and identified bilateral abnormal adrenals in only one patient. Among the 19 patients who underwent a postural test, 12 were correctly classified as APA, two with APA were incorrectly classified as BAH, while all four patients with BAH were incorrectly classified as APA. One patient had an inconclusive result.

CONCLUSION CT correctly identified the side of hypersecretion in about 80% of our patients with primary hyperaldosteronism. However, it often showed unilateral disease in patients with bilateral hypersecretion. Postural test appears to be inaccurate in subtyping patients.

CATEGORY: MEDICAL

EHASM2016-ORAL-M06

Medical certification: impact on a public primary healthcare system

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INTRODUCTION Medical certification (MC) is required for exemption from work or school in Singapore, and primary care clinics are often consulted by patients. Employers may require staff to seek consultation at public polyclinics due to favourable service charges and for chronic disease management. This study aimed to determine the proportions of patient attendance requiring MC at polyclinics, in association with demographic characteristics, occupation and medical conditions.

METHODS A questionnaire survey was conducted at all 18 local polyclinics in 2014. Subjects were recruited via two-stage age-stratified sampling at each polyclinic over a one-week period. They undertook a computer-assisted personal interview after informed consent was obtained. Data collected included demographic profiles, reasons for consultation, schools' or employers' policy on sick leave and sick leave information. Data was analysed using chi-square and Mann-Whitney *U* tests, and logistic regression was used to identify key factors influencing MC issuance.

RESULTS Data of 3,815 subjects was analysed. The weighted median age was 56 years and 50.8% were female. 65% of subjects were Chinese, 21.2% Malay and 9.3% Indian. Students comprised 15.3% of subjects, while 37.4% were employed, 30.1% unemployed and 27.2% under the Community Health Assist Scheme (CHAS). MC was issued to 28.5% of subjects, of whom 54.7% had acute problems. Average MC duration was 1.42 days. Subjects more likely to be issued MC were: male (OR 1.13); Malay (OR 2.17); younger (OR 0.96), higher educated (OR 1.76), not under CHAS (OR 1.19), serving blue collar jobs (OR 1.34) or military service (OR 3.84), living in smaller public housing (OR 3.99) and presenting with acute medical conditions (OR 4.25).

CONCLUSION MC consumed significant amounts of polyclinic healthcare services, which require review to serve a better-educated, ageing population. Flexible work arrangements and self-declared sick leave could be evaluated for its impact on patient safety, employer acceptability and workforce productivity.

CATEGORY: MEDICAL

EHASM2016-ORAL-M07

Significant discordance between cardiac magnetic resonance imaging and echocardiography in the assessment of right ventricular function

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INTRODUCTION We aimed to evaluate the incremental value of cardiac magnetic resonance (CMR) imaging over echocardiography (ECHO) in evaluating left ventricular (LV) and right ventricular (RV) functions. We also evaluated novel markers, such as global longitudinal strain (GLS), and compared them with MR imaging, in assessing LV and RV functions.

METHODS A retrospective study of 100 consecutive patients who underwent both 2D-ECHO and CMR imaging was performed. Pearson's correlation, Cohen's kappa coefficient (κ) with linear weighting, paired Student's *t*-test and chi-square test were used to compare CMR and ECHO measurements. We assessed LV function by ECHO parameters of LV ejection fraction (LVEF) and LV GLS. We also compared LV mass and thickness seen on ECHO against those on CMR imaging. RV function was assessed by ECHO parameters of RVEF, tricuspid annular plane systolic excursion and RV GLS. These were compared

against MR-derived LVEF and RVEF. We looked at whether impairments in any of the above parameters, or in one or both of a combination of these parameters correlated with an impairment of LV or RV function on MR imaging.

RESULTS There was good agreement in LVEF assessment between ECHO and CMR imaging ($\kappa = 0.63$). RV function analysis showed a moderate κ -value of 0.52 for ECHO RVEF and MR imaging RVEF. RV GLS was found to have the best negative predictive value for impaired RVEF. Of note, there were three cases of apical hypertrophic cardiomyopathy diagnosed only on CMR imaging.

CONCLUSION CMR has incremental value over ECHO, especially in the assessment of RV function and in cases of suspected localised or atypical LV hypertrophy. GLS may improve the assessment of LV and RV functions, while RV GLS may improve negative predictive value in RV assessment.

CATEGORY: MEDICAL

EHASM2016-ORAL-M08

Accuracy and clinical outcomes of coronary computed tomography angiography for patients with suspected coronary artery disease: a single-centre study

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INTRODUCTION This study aimed to assess the accuracy and outcomes of coronary computed tomography angiography (CCTA) performed in the Diagnostic Radiology Department at Changi General Hospital (CGH).

METHODS The CGH CCTA database was audited over a 24-month period. Electronic patient hospital records, and percutaneous coronary intervention and CCTA electronic databases were used to collate data on major adverse cardiovascular events (MACE) and catheter angiographic results in the patient subsets defined below. CCTA was considered positive if the coronary artery stenosis was graded $\geq 50\%$, or classified as moderate or severe. A catheter coronary angiogram was considered positive if coronary artery stenosis was graded $\geq 50\%$. MACE was defined as death, acute myocardial infarction, unstable angina, acute coronary syndrome or cardiac revascularisation. Information on MACE was retrieved from the hospital's electronic medical records.

RESULTS A database search identified 688 patients who had undergone CCTA as part of their clinical care to evaluate known or possible coronary artery disease. Of the 101 patients in the per-patient accuracy analysis group, six were true negatives, one false negative, 81 true positives and 13 were false positives, resulting in a negative predictive value of 86% and a positive predictive value of 86%. The mean age of the study sample was 53 years and 260 (38%) were female. Mean duration of patient follow-up was 360 days. Of the 513 CCTA-negative patients, none developed MACE during the follow-up period, and of the 164 CCTA-positive patients, 19 (12%) subsequently developed MACE.

CONCLUSION Our analysis of CCTA performed suggested accuracy and outcomes that are consistent with published clinical data, with excellent sensitivity and negative predictive values. There is a one-year MACE-free warranty period incurred by a negative CCTA.

CATEGORY: MEDICAL

EHASM2016-ORAL-M09

Screening for hearing loss in geriatric inpatients: how are we doing?

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INTRODUCTION This study aimed to: (a) evaluate the current standards of hearing loss screening in patients admitted to geriatric wards; (b) determine the prevalence of hearing loss; and (c) identify the concordance between patients' and their carers' perception of hearing problems.

METHODS A snapshot survey, as a quality improvement activity based on the comprehensive geriatric assessment (CGA) *pro forma*, was conducted in patients admitted to two geriatric wards. Patients who were already with hearing aids, acutely unwell and with palliative needs were excluded from the survey. Patients' carers were contacted by routine telephone enquiries to ascertain the concordance between patients' and carers' perception of hearing loss. We also checked if otological examination and/or referral for audiometry were undertaken in patients reporting hearing loss.

RESULTS 41 patients (23 female and 18 male), with a mean age of 85 years, were surveyed. 100% of patients were screened on admission using CGA. Hearing loss was reported by 9 (22%) patients and 21 (51%) carers. The prevalence of suspected hearing loss was 73% ($n = 30$). The concordance between patients' and carers' perception of hearing loss was 100% when patients reported hearing loss, and 29% when carers reported hearing loss but patients denied having hearing problems. We also noted that no otological examination and discussion with patients or carers regarding the need for audiology assessments were done in any of the patients.

CONCLUSION This snapshot clinical audit highlighted the high prevalence of suspected hearing loss in our elderly inpatients. This gives us an opportunity to identify potential patients and develop a structured pathway. A follow-up study after implementation of interventions would give us an insight into the feasibility of this opportunistic screening.

CATEGORY: MEDICAL

EHASM2016-ORAL-M10

Effectiveness of tonsillectomy as a single surgical procedure in the management of obstructive sleep apnoea in adults: a prospective study from 2007 to 2014

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INTRODUCTION This study aimed to evaluate the efficacy of tonsillectomy as a single surgical procedure in the reduction of respiratory disturbance index (RDI) and other sleep study parameters in patients with obstructive sleep apnoea (OSA). It also aimed to determine its surgical success rate for patients with Friedman Grade 3 or 4 tonsils without the need for other concurrent palatal surgery.

METHODS From 2007 to 2014, 107 adult patients with OSA and Friedman Grade 3 or 4 tonsils underwent tonsillectomy as the only surgical treatment for OSA. Pre- and postoperative polysomnography (PSG) were also performed.

RESULTS Of the 107 patients, 11, 27 and 69 patients had mild, moderate and severe OSA, respectively. Postoperative PSG showed a reduction of 31.5 ± 26.4 ($p < 0.001$) in RDI, as well as statistically signif-

icant improvement in all other PSG parameters. The overall surgical response rate was 70.1%. Patients with mild and moderate OSA had the highest surgical response rate of 90.9% and 85.2%, respectively. The surgical response rate was 85.7% for arbitrarily subdivided patients with body mass index (BMI) $< 30 \text{ kg/m}^2$. Notably, subgroup patients with BMI $> 40 \text{ kg/m}^2$ had a 71.4% response rate.

CONCLUSION Tonsillectomy as a single surgical procedure helps to improve sleep study parameters, and may be used as a first-line surgical modality in the treatment of OSA patients with Friedman Grade 3 or 4 tonsils. Patients with mild to moderate OSA and patients with BMI $< 30 \text{ kg/m}^2$ benefit the most from tonsillectomy. In addition, tonsillectomy should still be considered as a first-line procedure for OSA in selected patients with raised BMI who have tonsillar hypertrophy.

CATEGORY: MEDICAL

EHASM2016-ORAL-M11

Incidence of failed spinal anaesthesia and its associated risk factors

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INTRODUCTION Spinal anaesthesia is a commonly used anaesthesia technique. Failure of spinal anaesthesia would require either supplementation with analgesics/local anaesthesia or conversion to general anaesthesia. We aimed to study the incidence of failure of spinal anaesthesia in our institution and the risk factors associated with it.

METHODS Institutional review board waived the requirement for approval for this prospective study. Data was collected from all patients who received central neuraxial blockade in a single institution from January 2009 to December 2014. Data collected included demographic information, anaesthesia technique and possible risk factors that may predispose one to failure of spinal anaesthesia.

RESULTS A total of 6,897 spinal anaesthesia were performed over six years. There were 147 failed spinal anaesthesia (incidence rate 2.1%; 95% CI 1.8–2.5). Univariate analysis showed the following risk

factors associated with higher likelihood of failed spinal anaesthesia: lower American Society of Anesthesiologists physical status classification score; male gender; younger age; taller stature; absence of diabetes mellitus and neurological disease; performing spinal anaesthesia in a sitting or right lateral position; and addition of fentanyl. Logistic regression analysis showed that male gender (OR 2.9, 95% CI 1.9–4.5; $p < 0.001$), performing spinal anaesthesia in a sitting (OR 2.1, 95% CI 1.2–3.7; $p = 0.012$) or right lateral (OR 2.5, 95% CI 1.7–3.6; $p < 0.001$) position (compared to a left lateral position) and addition of fentanyl (OR 1.8, 95% CI 1.2–2.6; $p = 0.002$) were significant risk factors for failure of spinal anaesthesia.

CONCLUSION The incidence of failed spinal anaesthesia was 2.1%, similar to studies in other centres. Risk factors associated with failure of spinal anaesthesia were male gender, position when performing spinal anaesthesia and addition of fentanyl.

CATEGORY: MEDICAL

EHASM2016-ORAL-M12

Patients with hypothyroidism: factors associated with their thyroid status and levothyroxine replacement

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INTRODUCTION Levothyroxine (T4) replacement is the key treatment for patients with primary hypothyroidism. However, it has been shown that T4 replacement among these patients is often suboptimal. Based on literature review, we postulated that 17% of local patients had T4 underreplacement, which was associated with patient, physician and treatment factors. This study aimed to determine the proportion of patients with hypothyroidism who achieved euthyroid status in a polyclinic. The secondary aim included the identification of patient, physician, biochemical and treatment factors associated with thyroid status.

METHODS A questionnaire survey was conducted in patients with hypothyroidism based on their polyclinic electronic health records. Data collected included sociodemographic characteristics, clinical parameters, laboratory investigations, and T4 replacement doses and regimens. Patients were classified into 'adequate', 'under' and 'over' replacement groups based on their thyroid function test (TFT) results. ANOVA or Kruskal-Wallis test was used to compare the replacement

groups for continuous demographics and clinical indicators. Chi-square or Fisher's exact test was used to analyse categorical variables.

RESULTS The complete data of 229 patients was analysed. 59.8% of patients had TFT within the normal range ('adequate' group), and 27.5% and 12.7% were in the 'under' and 'over' replacement groups, respectively. Housing type (socioeconomic status), weight, body mass index (BMI), fasting lipid profile and mean daily or weekly T4 dose/kg were significantly associated with T4 replacement adequacy. More of those in the 'adequate' group stayed in private accommodations, had lower weight and BMI, and received a total of 7.7 mcg of T4/kg/week. Patients in the T4 'under' replacement group were more likely to have less favourable lipid profiles than the other two groups.

CONCLUSION 60% of patients with hypothyroidism received adequate T4 replacement. Physicians should be more vigilant in reviewing and adjusting patients' T4 replacement doses to maintain their normal thyroid status, especially those from the lower socioeconomic strata.

CATEGORY: MEDICAL

EHASM2016-ORAL-M13

A randomised controlled trial comparing PEAK PlasmaBlade® and monopolar electrocautery tonsillectomy in adults

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INTRODUCTION The aim of this study was to compare the relatively new PEAK PlasmaBlade® and traditional monopolar electrocautery tonsillectomy techniques, in terms of their advantages and complications, by evaluating the efficacy and postoperative pain and recovery of both methods of tonsillectomy in adults.

METHODS We conducted a prospective, double-blinded randomised controlled trial with 58 patients recruited. Patients were randomised into two groups: PEAK PlasmaBlade (n = 29) or monopolar electrocautery (n = 29) tonsillectomy. Postoperative pain, complications, patient satisfaction, and days taken to return to normal diet, normal activities and achieve pain-free swallowing were compared and analysed, with the aid of a pain diary given to patients. Statistical analysis was performed with SPSS version 13.0 with statistical significance set at $p < 0.05$.

RESULTS Patients in the PEAK PlasmaBlade group were able to achieve pain-free swallowing in a shorter time compared to those in the electrocautery group (13.28 days vs. 15.76 days; $p = 0.035$). Patients were also more satisfied with PEAK PlasmaBlade tonsillectomy ($p = 0.046$). No significant differences were seen in the incidence of postoperative haemorrhage, daily Visual Analogue Score for pain, and time taken to return to normal diet and activities in both groups.

CONCLUSION This study showed that PEAK PlasmaBlade tonsillectomy provides a faster recovery period in terms of time taken to achieve pain-free swallowing. This technique may offer advantages when compared to monopolar electrocautery tonsillectomy.

CATEGORY: MEDICAL

EHASM2016-ORAL-M14

Survival analysis in patients with and without implantable cardioverter defibrillator for primary prevention indication: a single-centre multiethnic experience

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INTRODUCTION There are multiple large randomised studies conducted in Western populations that assess whether primary prevention implantable cardioverter defibrillator (ICD) improves survival. However, studies on its impact in a multiethnic Asian population are limited.

METHODS A retrospective study was conducted from January 2012 to December 2013 in patients who fulfilled the primary prevention ICD criteria and received an ICD and in those who refused ICD despite counselling at Changi General Hospital. The primary endpoint was all-cause death, and secondary endpoints were cardiac- and arrhythmia-related deaths.

RESULTS Out of 285 patients, 74 (26%) received an ICD, and the mean follow-up was 32.2 ± 0.9 (95% CI 30.4–33.9) months. Compared to the ICD group, the non-ICD group had significantly older patients (66 ± 13 years vs. 59 ± 11 years; $p < 0.001$), more female (27% vs. 9%;

$p = 0.002$) and more hypertensive patients (68% vs. 54%; $p = 0.028$), but fewer patients with a history of myocardial infarction (49% vs. 65%; $p = 0.021$). Baseline left ventricular systolic function was similar in both groups (ICD $21\% \pm 8\%$ vs. non-ICD $22\% \pm 8\%$; $p = 0.423$). Mean cumulative survival time to all-cause death was significantly longer in the ICD group than in the non-ICD group (48.0 ± 1.8 , 95% CI 44.6–51.5 months vs. 36.6 ± 1.4 , 95% CI 33.8–39.4 months; $p < 0.001$). Independent predictors of all-cause death using Cox regression analysis were age (hazard ratio [HR] 1.05, 95% CI 1.03–1.07; $p < 0.001$) and ICD (HR 0.47, 95% CI 0.25–0.86; $p = 0.015$). For cardiac-related deaths, no differences were observed between the groups ($p = 0.722$). No arrhythmia-related death was observed in the ICD group compared to 11 in the non-ICD group ($p = 0.595$).

CONCLUSION From this three-year follow-up study, we conclude that ICD was the strongest independent predictor of survival.

CATEGORY: NURSING

EHASM2016-ORAL-N01

Evaluating the effectiveness of a clinical pharmacology record on graduating nursing students: an exploratory approach

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INTRODUCTION Nurses need to acquire medication competence in order to provide safe and effective medication management. A learning package named the C-Pharm Record (CPR) was created to supplement students' learning of pharmacology during clinical postings. This study aimed to measure the effect of the CPR on students' pharmacological knowledge and to gather their feedback on the CPR.

METHODS The study was conducted on two batches of graduating nursing students undergoing the Pre-Registration Consolidated Programme (PRCP) in 2014 and 2015. The control group (n = 94) was not exposed to the CPR. The intervention group (n = 121), who was exposed to the CPR for four months, was instructed to record case studies in the CPR and link common medications to clinical symptoms of patients. Clinical instructors verbally tested students' knowledge of common medications during the exposure period. Both groups

answered the same set of multiple choice questions (MCQs) in 2015 and 2016. A survey was administered to the intervention group to evaluate the CPR at the end of the PRCP.

RESULTS Independent *t*-test showed no statistical difference between the mean \pm standard deviation MCQ scores of the control and intervention groups (18.74 ± 3.586 vs. 19.06 ± 3.618 ; $p > 0.05$). 80.6% of students agreed that the CPR enhanced the application of pharmacology knowledge. 81.4% agreed that the CPR helped them to retain pharmacology knowledge and 76% agreed that they had benefitted from the CPR.

CONCLUSION The CPR did not have a significant statistical impact on the mean MCQ scores of the intervention group. However, students' feedback about the CPR was positive. Further studies on students with an extended period of exposure to the CPR are recommended.

CATEGORY: NURSING

EHASM2016-ORAL-N02

Barriers to the uptake of primary prevention implantable cardioverter defibrillator in a multiethnic population: a single-centre experience

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INTRODUCTION We sought to explore and identify barriers to the uptake of implantable cardioverter defibrillator (ICD) at our centre.

METHODS This was a retrospective study that examined consecutive patients who fulfilled the criteria for, but refused primary prevention ICD despite counselling, over a two-year period (January 2012–December 2013) at our centre.

RESULTS Of the 285 patients studied, 211 (74.0%) refused ICD despite counselling. The mean age of patients was 66 ± 13 years and the cohort were predominantly Chinese (46.9%). The median follow-up period was 39.7 ± 1.2 (95% CI 37.3–42.0) months. Of those who refused ICD, 73.0% were male, 58.3% had diabetes mellitus and 68.2% were hypertensive. Mean left ventricular systolic function was $22\% \pm 8\%$. The most common aetiology of cardiomyopathy was ischaemic heart disease (49.3%). The most common reason for ICD refusal was indecision and apprehension of

ICD procedure (39.3%), followed by financial issues (33.6%) and religious beliefs (0.5%). The reason was unknown in the remaining 26.5%. Multivariate analysis showed the following independent predictors of ICD refusal: ethnicity; gender; and age. Compared to Malays, Chinese (OR 3.1, 95% CI 1.6–6.0; $p = 0.001$) and Indians (OR 5.6, 95% CI 1.8–17.0; $p = 0.002$) were more likely to receive ICDs. Male patients were more likely to receive ICDs (OR 3.1, 95% CI 1.3–7.5; $p = 0.012$). Patients aged 20–49 years (OR 28.4, 95% CI 3.3–241.2; $p = 0.002$) and 50–79 years (OR 14.4, 95% CI 1.9–109.1; $p = 0.010$) were more likely to receive ICDs compared to those aged ≥ 80 years.

CONCLUSION ICD uptake remains low in our institution and the main reason was indecision, coupled with apprehension of ICD implantation. Malay, female and older patients were more likely to refuse ICD implantation.

CATEGORY: NURSING

EHASM2016-ORAL-N03

Comparing two modalities of nursing professional training on osteoporosis management: a randomised controlled trial

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INTRODUCTION This study aimed to compare the effectiveness of web-based versus face-to-face professional training of nurses on osteoporosis management and to gather nurses' feedback on web-based learning.

METHODS 120 registered nurses from SingHealth Polyclinics were randomised into web-based (intervention) or face-to-face (convention) modalities of professional training programme. Nurses in the intervention group undertook a one-week, web-based training course on osteoporosis management. Nurses in the face-to-face training course attended a three-hour lecture on the same subject. Nurses' knowledge was assessed at baseline and post-intervention using the Facts on Osteoporosis Quiz (FOOQ). Pre- and post-test scores were compared between and within groups. The experiences of nurses in the intervention group were measured using the Online Learner Support Instrument (OLSI).

RESULTS No significant differences were noted in the mean \pm standard deviation baseline FOOQ scores between the convention and intervention groups ($13.9/20 \pm 2.9$ vs. $13.5/20 \pm 2.8$; $p = 0.50$). The FOOQ scores for both groups improved significantly after the training ($p < 0.01$). The face-to-face group had a higher mean post-intervention score than the web-based group ($17.6/20$ vs. $16.1/20$; $p < 0.01$). Based on OLSI measurements, 81% of nurses from the web-based group found the course material well organised and easy to read. However, only 27% felt they had enough time to work on the course. 66% preferred the classroom face-to-face modality for future trainings.

CONCLUSION The face-to-face method seems to be more effective than the web-based method. The latter presents challenges related to the nurses' information technology skills and time constraints. These factors should be considered in the design of web-based training module for future implementation.

CATEGORY: NURSING

EHASM2016-ORAL-N04

A randomised trial of probiotics to reduce the duration of vancomycin-resistant enterococci carriage

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INTRODUCTION Vancomycin-resistant enterococci (VRE) are a type of multidrug-resistant bacteria. VRE carriage may be prolonged, and there is currently no effective method for decolonisation. This study aimed to better understand the duration of VRE carriage, identify the role of probiotics in shortening VRE carriage duration and analyse patient risk profile for prolonged VRE carriage.

METHODS Patients who screened positive for VRE were invited to enrol in the study. They were randomised into either the control group, which received no additional dietary supplementation, or the trial group, which received daily supplementation of Lactobacillus GG (ten billion cells) for 16 weeks. All patients were tested fortnightly for the presence of VRE during the 16-week duration. Patients were classified as VRE carriage-free if they had two consecutive negative cultures at the end of Week 16. Data

on patients' clinical comorbidities and antibiotic exposure history were collected.

RESULTS A total of 59 patients were enrolled in this study. However, two patients died and 11 withdrew before completing the study. Of the 46 remaining patients, 22 were in the control group and 24 were in the trial group. The median duration of VRE carriage was 42 (range 14–112) days, and VRE positivity was often intermittent. 31 (67%) patients (trial group: 17 [55%]; control group: 14 [45%]) were VRE carriage-free at the end of Week 16. There was no significant difference in VRE clearance between the two groups. The most common comorbidities were renal failure and diabetes mellitus. There was no association between any of the documented comorbidities and prolonged VRE carriage.

CONCLUSION We found that the median duration of VRE carriage is about six weeks and administration of probiotics has no significant impact on clearing of VRE.

CATEGORY: NURSING

EHASM2016-ORAL-N05

A qualitative research study on patients with newly diagnosed type 2 diabetes mellitus: how do they manage their diet?

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INTRODUCTION This study aimed to explore the understanding and perception of diet management in patients with newly diagnosed type 2 diabetes mellitus (T2DM).

METHODS 15 adult patients aged ≥ 21 years with newly diagnosed T2DM were recruited from a cluster of local public polyclinics. They were surveyed via five focus group discussions and five in-depth interviews using a topic guide, until idea saturation was reached. The interviews were audiotaped, transcribed, audited and analysed to identify emergent themes. Themes were finalised after discussion among the investigators.

RESULTS The main themes identified were: (a) Self-initiatives: while most patients were aware of the need for dietary control, few made deliberate efforts to change their diet, food portions and meal frequency; (b) Barriers: patients reported knowledge gap, reluctance to change behaviour and time constraints due to work commitments as barriers. Most patients perceived that only sweetened food and

beverages would affect their T2DM control and lacked awareness of the glycaemic index of food options. They also described temptations to rich food during festive seasons and were uncertain of healthier food choices when dining out. Busy work schedule interfered with time needed to prepare home-cooked food; and (c) Help- and health-seeking behaviour: patients obtained dietary information from the Internet, magazines, newspapers and pamphlets. Few attended dietary counselling by dietitians and nurse counsellors. A minority of patients sought advice from relatives and friends on food preparations, but such advice might not include evidence-based measures for healthier diet.

CONCLUSION Patients with newly diagnosed T2DM faced barriers in their dietary control, including behavioural change, knowledge gap and access to reliable sources of information. Further research is needed to assess the magnitude of these barriers and to determine the effectiveness of dietary-based interventions in achieving optimal glycaemic control.

CATEGORY: NURSING

EHASM2016-ORAL-N06

Care transition for heart failure patients to primary care: the Changi General Hospital experience

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INTRODUCTION Primary care co-management has been shown to improve outcomes in patients with heart failure. In Singapore, primary care involvement in management of heart failure patients is limited. In this prospective study, we aimed to examine the characteristics of heart failure patients referred from an acute care setting to a primary care partner in the eastern part of Singapore and to identify barriers to care transition.

METHODS Patients with a primary discharge diagnosis of heart failure admitted to Changi General Hospital's Cardiology Department from March to May 2016 were included. Data was obtained from the hospital's electronic system and patient's case notes. Eligible patients were given the option to be co-managed by a local family medicine centre. The demographics and characteristics of patients, based on whether or not they accepted co-management, were compared.

RESULTS Of 166 patients recruited for this study, 131 (79%) were eligible for co-management. 75 (57%) patients enrolled in

co-management and 56 (43%) did not. The top five reasons for declining co-management were financial reasons (50%), preference for follow-up with polyclinics (27%) or own general practitioners (2%), location or distance from home (9%) and personal reasons (9%). Chinese patients were more likely to accept enrolment (53% enrolled vs. 36% not enrolled), while Malay patients were less likely to accept enrolment (27% enrolled vs. 36% not enrolled) ($p < 0.05$). There were no significant differences between the enrolled and non-enrolled groups in terms of gender, the prevalence of incident heart failure, or number of patients with ≥ 3 comorbidities. Enrolled patients were more likely to be aged ≥ 70 years.

CONCLUSION Primary care engagement in the management of heart failure patients is crucial in reducing rehospitalisations and improving outcomes in this group of patients. Knowing the profile and reasons for declining follow-up will allow us to target strategies to improve patient uptake.

CATEGORY: NURSING

EHASM2016-ORAL-N07

A new case management model for patients at risk of readmission at Changi General Hospital

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INTRODUCTION This study evaluated a new model of care for patients at risk of readmission in an acute care setting.

METHODS A prospective study was conducted in eight wards at Changi General Hospital from April 4, 2016 to June 30, 2016 for all newly admitted patients who were stratified into groups of low-, moderate- or high-risk of readmission using a risk stratification tool. The components of the new model of care included: (a) an assessment using BOOST risk assessment tool; (b) a care plan development to address care needs; and (c) 72-hour post-discharge telephonic follow-up.

RESULTS Of the 1,354 newly admitted patients, 404 (29.8%), 208 (15.4%) and 742 (54.8%) were identified as high, moderate and low risk, respectively. Of the 612 patients in the high- and moderate-risk

groups, 352 (57.5%) were male and 260 (42.5%) were female. 352 (57.5%) were Chinese, 144 (23.5%) were Malay, 67 (11.0%) were Indian and 49 (8.0%) were of other ethnicities. The median age was 71 (range 24–107) years. Among the 612 patients, 530 (86.6%) were case-managed. The remaining 82 (13.4%) were not, as they did not fulfil the criteria. After implementation of the model, there was a 4% reduction in rehospitalisations (from 22% to 18%) for the high-risk group, but no difference was observed in the moderate-risk group.

CONCLUSION The new model of care has identified and addressed care proactively. A 72-hour post-discharge phone call service provides an additional avenue to address care gaps and reduce preventable hospital readmissions.

CATEGORY: NURSING

EHASM2016-ORAL-N08

The effect of educative interventions on enhancing nurses' knowledge in prevention and management of pressure ulcer

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INTRODUCTION The aim of this study was to evaluate nurses' knowledge and competency in preventing and managing pressure ulcers (PU) through formal education.

METHODS A descriptive mixed-method design was employed and random purposeful sampling was adopted. 134 nurses comprising nurse managers, nurse clinicians and assistant nurse clinicians were invited to attend a two-day workshop. Data was collected from the nurses' pre- and post-educative interventions using a knowledge test of 20 multiple-choice questions. Competencies were evaluated through case-study discussions using pre-designed competency checklists. The components of the checklist included the criteria for accuracy of assessment, and appropriateness of preventive and management intervention. Open-ended-question surveys were utilised to gather nurses'

perception about the contents of the workshop and collected at the end of each session.

RESULTS Paired *t*-test analysis elucidated a significant difference between pre- and post-test scores ($t = -22.876$; $p < 0.001$), and η^2 statistics (0.797) indicated a large effect size. Responses from open-ended questions were positive. Some verbatim responses included "weekly sharing of PU knowledge", "teach staff on good documentation" and "take ownership and conduct PU audits".

CONCLUSION The results of this study suggest that the workshop contributed significantly to the enhancement of nurses' knowledge of and competency in PU prevention and its management. Hence, this formal education among nurses is vital in augmenting the spread of standardised and best practices across Changi General Hospital.

CATEGORY: NURSING

EHASM2016-ORAL-N09

Inpatient wards nurses' readiness in providing caregiver training on tracheostomy care and management at home

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INTRODUCTION This study aimed to determine the readiness of inpatient wards nurses (IWNs) in providing training to caregivers on tracheostomy care and management at home (TCMH).

METHODS A cross-sectional quantitative study was conducted between January and May 2016 to assess IWNs' readiness in providing caregiver training on TCMH. The general population of 346 IWNs was based in ward locations where patients with tracheostomy were discharged home. Convenience sampling method was used to recruit IWNs. A sample size of 183 was required to meet a 95% confidence level. IWNs working in isolation wards/high-dependency and intensive care units, non-staff nurses and senior staff nurses were excluded. A survey was developed and sent to a peer to assess for comprehensibility and to a tracheostomy nurse for face validity. Descriptive analysis was done using Microsoft Excel 2013.

RESULTS 232 IWNs participated in the survey. 229 (98.3%) IWNs had previous encounters with caring for inpatients with tracheostomy,

but only 59.7% had formal education in this area. Among 93 IWNs who had conducted caregivers' training, 21 had no formal education in TCMH. There were more IWNs who had never trained caregivers on emergency care of tracheostomy at home than IWNs who had, whether they had formal education in such care (n = 40 vs. n = 29) or not (n = 15 vs. n = 6). Nurses (60.4%) had the highest involvement in training caregivers on TCMH, followed by respiratory therapists (17.3%) and physiotherapists (15.9%).

CONCLUSION This study revealed that respiratory therapists and physiotherapists have less involvement in providing caregivers' training on TCMH than nurses. There were more IWNs who had experience caring for inpatients with tracheostomy than those who had received formal education on tracheostomy care and management. The lack of caregiver training on the aspect of emergency care and management of tracheostomy at home by IWNs requires further exploration.

CATEGORY: NURSING

EHASM2016-ORAL-N10

Evaluation of zero-heat-flux thermometry as an alternative to rectal thermometry for measurement of core temperature in critically ill neurosurgical patients

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INTRODUCTION Rectal thermometry is the current standard for core temperature measurement in critically ill neurosurgical patients. Due to the use of a rectal temperature probe, there is a risk of rectal bleeding or ulcers. Moreover, inaccuracies may occur in the presence of faecal impaction or probe dislodgement. The aim of this study was to test for agreement between rectal thermometry and cutaneous zero-heat-flux thermometry, a novel noninvasive method.

METHODS This prospective study with a quasi-experimental design was conducted in the surgical intensive care unit (SICU) of Changi General Hospital. All neurosurgical SICU admissions from December 2015 to June 2016 were screened. Inclusion criteria were age ≥ 21 years, and requirement for mechanical ventilation and sedation. Patients who had impaired skin integrity on the lateral forehead or any rectal conditions were excluded. 66 patients were consecutively sampled. Upon recruitment, each patient's demographics were collected, a rectal temperature probe was inserted and a noninvasive cutaneous

temperature sensor was applied on the lateral forehead. Paired data was recorded simultaneously at four-hour intervals over a period of 72 hours.

RESULTS 961 paired data was analysed using the Bland-Altman method to test for agreement between the two modalities of temperature measurement. *A priori*, limits of agreement (LOA) were set at 95%, and a mean temperature difference of $\pm 1^\circ\text{C}$ was deemed clinically acceptable. None of the patients exceeded the 95% LOA (-1.75 , 1.96). 99.4% of the paired data fell within $\pm 1^\circ\text{C}$ temperature tolerance. On average, cutaneous thermometry measured 0.1°C more than rectal thermometry.

CONCLUSION Cutaneous zero-heat-flux thermometry is a suitable alternative for measurement of core temperature in critically ill neurosurgical patients. The benefits are noninvasiveness, better tolerability of patients, ease of application, visualisation of cutaneous temperature sensor and eliminated risks of cross-contamination.

CATEGORY: NURSING

EHASM2016-ORAL-N11

Patient aggression experienced by staff in a general hospital of Singapore

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INTRODUCTION This study aimed to: (a) identify the prevalence and types of aggression experienced from patients by healthcare professionals in a local general hospital; (b) examine staff's psychosocial factors contributing to the aggression experienced; and (c) explore the psychological impact on staff when handling aggressive and violent patients.

METHODS The study used a mixed qualitative and quantitative non-experimental design and was conducted in a general hospital. A non-random purposive sample (n = 1,912) of the hospital frontline staff from a variety of healthcare professionals was included. Data was collected through self-reported questionnaires on Perception of Patient Aggression Scale, Depression Anxiety and Stress Scale, and face-to-face interview.

RESULTS The majority (84.5%) of staff had ever experienced aggression from patients. The most frequent types of aggression experienced were verbal aggression (81.7%), passive-aggressive behaviours

(58.4%), humiliating aggression (52.2%) and mild physical violence (47.5%). Gender, profession, years of working experience and symptoms of depression/anxiety/stress were significant contributing factors for the respective types of aggression experienced. Despite knowing that aggression and violence can be attributed to illness or miscommunication, staff still experienced mixed feelings of anger, frustration, fear, trauma and guilt when handling such patients.

CONCLUSION The findings of our study create awareness on the frequent occurrence of aggression in a general hospital and the negative psychological impact to its staff. It provides a basis for appropriate intervention and direction in designing a constructive training programme to prepare healthcare professionals to better manage aggression, thereby reducing the incidence and minimising the risk of physical and psychological injury resulting from aggressive and violent behaviours.

Summary of Poster Presentation

Abstract No.	Title	Presenter
<i>10 November 2016, Thursday, Changi General Hospital, The Atrium</i>		
Category: Allied Health		
EHASM2016-Poster-AH01	Drug utilisation review of rivaroxaban for the treatment of venous thromboembolism	Mr Lee Keith, Pharmacy, CGH
EHASM2016-Poster-AH02	Performance of functional outcomes between community-ambulant and home-ambulant patients in a day rehabilitation centre setting	Ms Pang Li Chin, Day Rehabilitation Centre, St Andrew's Community Hospital
EHASM2016-Poster-AH03	Molecular detection of pathogens for acute gastroenteritis	Ms Heng Ying Xuan, Laboratory Medicine, CGH
EHASM2016-Poster-AH04	Electrolyte imbalance in patients on customised versus ready-to-use parenteral nutrition	Ms Huang Yingxiao, Dietetic and Food Services, CGH
EHASM2016-Poster-AH05	Work health orientation programme with nutrition workshop for Changi General Hospital staff: initiative of a health-promoting hospital	Ms Shirlene Moh, Dietetic and Food Services, CGH
EHASM2016-Poster-AH06	Patient activation is associated with better self-management for patients with heart failure	Mr Tong Shao Chuen, Health Services Research, EHA
EHASM2016-Poster-AH07	English cognitive communication screener for persons with acquired brain injury	Ms Alena Low, Rehabilitative Services, CGH
EHASM2016-Poster-AH08	Fluoroscopy-guided peripherally inserted central catheter line insertion	Mr Normandy Destreza, Radiography, CGH
EHASM2016-Poster-AH09	A review of the utilisation of the Medication Assistance Fund Plus scheme: a four-year Changi General Hospital experience	Mr Ian Wee, Pharmacy, CGH
EHASM2016-Poster-AH10	A microbiologist-initiated service for improved appropriate carbapenem use in patients with bacteraemia	Ms Ow Yong Pu En, Pharmacy, CGH
EHASM2016-Poster-AH11	Factors influencing the quality of life of breast cancer patients and their partners at the peridiagnosis phase in Changi General Hospital	Dr Aung Khin Chaw Yu, Health Services Research, EHA
EHASM2016-Poster-AH12	Improving the nutritional intake of residents with dysphagia with ready-to-eat functional foods	Ms Marsha Tan, Dietary/Kitchen, The Salvation Army Peacehaven Nursing Home
EHASM2016-Poster-AH13	Assessment of a novel heart rhythm monitoring device (Spyder) in the detection of atrial fibrillation in post-stroke patients	Mrs Tan Liy Si, Clinical Measurement Unit, CGH
EHASM2016-Poster-AH14	Magnetic resonance imaging of the knee: replacing 2D acquisitions with 3D reconstructions	Mr Ong Yi Xiong, Radiography, CGH
EHASM2016-Poster-AH15	Caregivers' attitudes and concerns toward feeding and swallowing issues in people with dementia	Ms Geraldine Wee, Rehabilitative Services, CGH
EHASM2016-Poster-AH16	Adherence to medications in heart failure patients readmitted to Changi General Hospital	Ms Goh Wen Chi Sherry, Pharmacy, CGH
EHASM2016-Poster-AH17	Comparison of two blood culture systems for detection of bloodstream pathogens in the absence and presence of antibiotics	Ms Tan Wei Ling, Laboratory Medicine, CGH
EHASM2016-Poster-AH18	Low-dose versus routine computed tomography of kidneys, ureters and bladders: a retrospective review	Ms Nurul A'in Rahman, Radiography, CGH
EHASM2016-Poster-AH19	A caregiver's guide to thickening supplements	Ms Geraldine Wee, Rehabilitative Services, CGH
EHASM2016-Poster-AH20	Validity and efficacy of an interprofessional model of education for musculoskeletal physiotherapists	Ms Leung Yee Sum Elsa, Rehabilitative Services, CGH
EHASM2016-Poster-AH21	Knowledge and beliefs associated with travel health-planning among Singapore residents	Ms Low Siew Ying, Pharmacy, CGH
EHASM2016-Poster-AH22	Review of a new department guideline: safe use of central venous catheters for contrast injection using power injector	Mr Wee Jun Chiang, Radiography, CGH
EHASM2016-Poster-AH23	Factors influencing the human gut microbiome profile in multiethnic groups of the Singapore community	Dr Koo Seok Hwee, Clinical Trials and Research Unit, CGH
Abstract No.	Title	Presenter
Category: Medical		
EHASM2016-Poster-M01	Assessment of public awareness of chronic obstructive pulmonary disease in Singapore through an awareness campaign	Ms Kelly Chng, Yong Loo Lin School of Medicine, NUS
EHASM2016-Poster-M02	A 24/7 hospital toxicology service: experience of a new start-up	Dr Gabriel Joseph Arciaga, Accident and Emergency, CGH
EHASM2016-Poster-M03	Left- versus right-sided perforated diverticulitis: is there a difference?	Ms Shivani Rajaraman, Yong Loo Lin School of Medicine, NUS
EHASM2016-Poster-M04	Efficacy and safety in the management of paracetamol poisoning treated with n-acetyl cysteine in a 23-hour observation unit of an emergency department: a comparison with standard inpatient care	Dr Kuan Kaibin Kelvin, Accident and Emergency, CGH
EHASM2016-Poster-M05	Prescribing patterns in the maintenance phase of patients with bipolar disorder in an outpatient setting	Dr Lim Chau Sian, Psychological Medicine, CGH
EHASM2016-Poster-M06	A survey of resident's perception of medical emergency team and its contribution to training in acute medicine: how residents met their training	Dr Ng Kangqi, General Medicine, CGH
EHASM2016-Poster-M07	Raised preoperative carcinoembryogenic antigen as a risk factor for recurrence in non-metastatic rectal cancers: identifying factors for intensive surveillance strategies	Ms Jacqueline Leow, Yong Loo Lin School of Medicine, NUS
EHASM2016-Poster-M08	Knowledge of the Mental Capacity Act and its application among doctors working in Changi General Hospital: an informed medical workforce survey	Dr Bharathi Balasundaram, Psychological Medicine, CGH
EHASM2016-Poster-M09	Incidence and risk factors of post-stroke seizures	Dr Shrikant Pande, Rehabilitation Medicine, CGH

EHASM2016-Poster-M10	Malignant breast nodules on computed tomography: imaging features with histopathological correlation	Dr Liew Jia Ren Perry, Diagnostic Radiology, CGH
EHASM2016-Poster-M11	Treatment gaps in osteoporosis are more prevalent in patients aged below 65 years in a regional general hospital setting in Singapore	Dr Linsey Gani, Endocrinology, CGH
EHASM2016-Poster-M12	Risk factors associated with trigger finger: a case-control study	Dr Koh Kim Hwee, SingHealth Polyclinics – Tampines
EHASM2016-Poster-M13	Preoperative anxiety and ease of insertion of laryngeal mask airway – comparison between day surgery patients undergoing minor breast surgery and wisdom teeth extraction: a pilot study	A/Prof Yoong Chee Seng, Anaesthesia and Surgical Intensive Care, CGH
EHASM2016-Poster-M14	Smoker types and quit rates: can e-cigarettes be of benefit?	Dr Yong Thon Hon, Cardiology, CGH
EHASM2016-Poster-M15	Are too many hands present? A study of manpower utilisation during medical emergency team activations	Mr Loh Wei Liang, Yong Loo Lin School of Medicine, NUS
EHASM2016-Poster-M16	Changing demography of asthma attendances in Singapore: a six-year observation study in a public primary care institution	Dr Zheng Lifeng, SingHealth Polyclinics – Geylang,
EHASM2016-Poster-M17	Community-acquired pressure ulcers in older patients	Dr Barbara Helen Rosario, Geriatric Medicine, CGH
EHASM2016-Poster-M18	Impact of a telehealth programme on patient self-management behaviour and knowledge: a preliminary analysis	Dr Aung Khin Chaw Yu, Health Services Research, EHA
EHASM2016-Poster-M19	Review of inpatient rehabilitation transfer back to acute wards	Dr Wee Tze Chao, Rehabilitation Medicine, CGH
Abstract No.	Title	Presenter
Category: Nursing		
EHASM2016-Poster-N01	Diabetes Conversation Map: an interactive diabetes mellitus education tool	Ms Irmawati Ardzi, SingHealth Polyclinics – Marine Parade
EHASM2016-Poster-N02	Prevalence and management of urinary incontinence in an acute geriatric setting	Ms Gan Peiying, Advanced Practice Nurse Development/Specialty Nursing, CGH
EHASM2016-Poster-N03	Effect of Advance Care Planning on the care of patients referred to palliative care service in a restructured hospital	Ms Wang Li Yun, Advanced Practice Nurse Development/Specialty Nursing, CGH
EHASM2016-Poster-N04	Ethnic differences in ST-segment elevated myocardial infarct incidence and 30-day case fatality rate in Singapore in 2007–2014	Ms Ng Keat Siew, National Registry of Diseases Office, HPB
EHASM2016-Poster-N05	Going beyond acute care for patients with inflammatory bowel disease via a helpline service	Ms Sun Xi, Case Management, CGH
EHASM2016-Poster-N06	Validation of the Mandarin version of the Hypertension Self-Care Profile instrument using web-based approach	Ms Agnes Ngoh, Nursing, SingHealth Polyclinics
EHASM2016-Poster-N07	A compliance study on the management of patients with chronic obstructive pulmonary disease according to obstructive lung disease guidelines	Ms Norlidah Mohd Noor, Case Management, CGH
EHASM2016-Poster-N08	Strategies to improve recruitment for the outpatient Cardiac Rehabilitation Programme: an evaluation and outcome study	Mr Sng Zhen Chai, Case Management, CGH
EHASM2016-Poster-N09	Is the Modified Rankin Scale a predictor for stroke readmission?	Ms Soyah Mohamed Noor, Case Management, CGH
EHASM2016-Poster-N10	An initial evaluation on the implementation processes of the Palliative Care Outcomes Collaboration patient assessment tool for the inpatient palliative care consultative service at Changi General Hospital	Ms Wong Yoke Ping, Advanced Practice Nurse Development/Specialty Nursing, CGH
EHASM2016-Poster-N11	Developing person-centred care for older persons with dementia in the acute hospital	Ms Zhou Linfang, Nursing, CGH
EHASM2016-Poster-N12	Functional assessment of hip fracture patients after surgery in a single centre: a comparative study	Ms Lee Yian Chin, Case Management, CGH
EHASM2016-Poster-N13	Is tube thoracostomy necessary for traumatic occult pneumothorax? A six-year review	Mr Ng Peifu, Nursing, CGH
EHASM2016-Poster-N14	Transitional Living Unit in Singapore: a novel and remarkable initiative	Ms Fong Poh Chee, Nursing, CGH
EHASM2016-Poster-N15	A pilot study to evaluate the effectiveness of advanced practice nurse-led in-service talks in a general surgical ward of a restructured hospital	Ms Cheng Shu Hua, Advanced Practice Nurse Development/Specialty Nursing, CGH
EHASM2016-Poster-N16	Occupational stress and burnout in registered nurses	Ms Siti Aishah Ab Latip, Nursing, CGH
EHASM2016-Poster-N17	Early and safe discharge of oesophagogastroduodenoscopy patients from an endoscopy centre	Ms Lee Mui Yok, Endoscopy Centre, CGH

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH01

Drug utilisation review of rivaroxaban for the treatment of venous thromboembolism

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INTRODUCTION Rivaroxaban is a selective factor Xa inhibitor indicated for the treatment of venous thromboembolism (VTE). The aims of this review were to: (a) determine the prescribing patterns and clinical outcomes; and (b) investigate the incidence and nature of rivaroxaban-associated adverse drug events in this patient population.

METHODS A retrospective cohort study was performed in all adult patients who received rivaroxaban for the treatment of VTE between 1 June 2014 and 30 June 2015. Data collected included patient demographics, dosing regimens prescribed, adverse drug events, and adverse clinical outcomes including mortality rate, incidence of myocardial infarction, cerebrovascular stroke and recurrent VTE.

RESULTS 83 patients (mean age 62.2 years) were included in the study. Dosing regimens were appropriate for most (91.6%) patients. 54 (65.0%) patients were treated for the appropriate duration of six months with complete resolution of VTE, while 11 patients were treated for

durations shorter than recommended due to cost issues, deterioration of renal function and/or adverse drug events. Apart from three patients who passed away, 9 (10.8%) developed adverse clinical outcomes (four recurrent deep vein thrombosis, three pulmonary embolism, one ischaemic stroke and one myocardial infarction). 8 (9.6%) patients developed non-major bleed (*viz.* haematuria, mild mucosa bleeding) and 1 (1.2%) experienced dyspepsia. There was also one documented case of intracranial haemorrhage, which resulted in discontinuation of rivaroxaban therapy.

CONCLUSION Dosing regimens used for the treatment of VTE were generally appropriate during the study period, and mortality rate among patients was low, although it was not possible to establish a causal link to the use of rivaroxaban. Rivaroxaban was generally well tolerated, and adverse drug events (including bleeding episodes) affected approximately one-tenth of all patients, which was similar to that of previous literature reports.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH02

Performance of functional outcomes between community-ambulant and home-ambulant patients in a day rehabilitation centre setting

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INTRODUCTION This study aimed to determine if there are significant differences in functional outcomes, such as Berg Balance Scale score and Timed Up and Go (TUG) test, gait speed, and 5 Times Sit to Stand (5STS) and 6 Minute Walking Test (6MWT), between home-ambulant and community-ambulant patients.

METHODS Subjects were recruited via convenient sampling at St Andrew's Community Hospital Day Rehabilitation Centre. They were identified as home-ambulant (*n* = 10) or community-ambulant (*n* = 10) if they were able to ambulate independently at home or in the community. Informed consent was obtained. Subjects were assessed by a physiotherapist for functional outcomes in a single session. Data was analysed using Student's *t*-test, with *p*-value set at 0.05.

RESULTS There was a significant difference in functional outcomes between the home- and community-ambulant groups. Mean 5STS and TUG in the home-ambulant group were 17.3 seconds and 28.1 seconds, respectively – an indication of fall risk, even though subjects were reported to be ambulating independently at home (5STS cut-off 15 seconds; TUG cut-off 13.5 seconds for community-dwelling elderly). Mean 6MWT distance in the community-ambulant group was 286.2 m, similar to the literature findings of > 250 m for community walkers.

CONCLUSION Our results provided insights into the differences in functional performance of home-ambulant and community-ambulant patients. Future research warrants a larger sample size to investigate possible predicting factors for independent community walking and to develop an exercise group programme for training to walk in the community.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH03

Molecular detection of pathogens for acute gastroenteritis

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INTRODUCTION Bacterial culture for acute gastroenteritis (AGE) has limitations: it is time-consuming and results often take 3–4 days. This study aimed to compare a same-day-to-result molecular method, polymerase chain reaction (PCR) for the detection of bacterial pathogens against conventional culture method, and to characterise the epidemiology of AGE in Singapore.

METHODS PCR for *Campylobacter* spp., *Salmonella* spp., *Shigella* spp./enteroinvasive *Escherichia coli* (*E. coli*) (EIEC) and Shiga toxin-producing *E. coli* (STEC)/*Shigella dysenteriae* was performed on the BD MAXTM platform. Concurrent routine bacterial culture was performed for *Salmonella*, *Shigella*, *Campylobacter* and halophilic bacteria (vibrios and aeromonads). Discrepant results were resolved by separate laboratory-developed PCR assays, with the latter also detecting for enterotoxigenic *E. coli* (ETEC).

RESULTS 254 samples were included in the study, with no bacterial pathogens detected in 187 samples (73.6%). The following bacterial

pathogens were detected: *Salmonella* (n = 31, 12.2%); *Campylobacter* (n = 17, 6.7%); *Vibrio parahaemolyticus* (n = 6, 2.4%); *Shigella*/EIEC (n = 4, 1.6%); ETEC (n = 4, 1.6%); STEC (n = 2, 0.8%); aeromonas (n = 2, 0.8%); and *Plesiomonas shigelloides* (n = 1, 0.4%). When compared to the final result, culture method missed 20 (29.9%) out of 67 pathogens, including *Salmonella* (n = 6), *Campylobacter* (n = 6) and *Shigella* (n = 3). Conversely, testing by BD MAXTM alone failed to detect 13 (19.4%) pathogens, which were not in the BD MAXTM panel and two *Salmonella*. BD MAXTM reported 4 (2.0%) false-positive results. A combination of BD MAXTM testing and culture for halophilic bacteria would have a diagnostic sensitivity and specificity of 93.8% and 96.8%, respectively.

CONCLUSION BD MAXTM increased the detection yield of bacterial AGE pathogens, but the absence of detection capability for the halophilic bacteria affects the overall sensitivity of the system. A combination of culture for vibrios and aeromonads with BD MAXTM usage will provide the optimum detection sensitivity.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH04

Electrolyte imbalance in patients on customised versus ready-to-use parenteral nutrition

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INTRODUCTION Parenteral nutrition (PN) is provided to patients who cannot be fed enterally. PN may be provided with customised (CPN) or ready-to-use (RTU) bags. RTU PN is available as fixed combinations of macronutrients with or without electrolytes. The inability to customise electrolyte concentrations may result in electrolyte imbalance, especially in patients at risk of refeeding syndrome. The objectives of this study were to determine: (a) the incidence of electrolyte imbalance; and (b) the association of hypophosphataemia, hypomagnesaemia and hypokalaemia with CPN and RTU PN.

METHODS This was a retrospective study on patients initiated on either RTU PN or CPN between August 2015 and May 2016. Anthropometry, biochemistry and nutritional status were analysed. The association of electrolyte imbalance with independent variables was assessed using Fisher's exact test. All main effects were tested with two-sided and p < 0.05 level tests.

RESULTS PN was started in 94 patients, of whom 60.6% were malnourished or at risk of malnutrition. 18.1% of patients were started on RTU bags. The incidence of hypomagnesaemia was lower (2.1%) compared to that for hypokalaemia (26.6%) and hypophosphataemia (34.8%). 21 patients on CPN had at least one hypokalaemic event (OR 6.38, 95% CI 1.09, 37.34). There was a statistically significant association between the incidence of hypokalaemia and hypophosphataemia (p < 0.05). No statistically significant associations were found between malnutrition and electrolyte imbalance.

CONCLUSION The use of RTU bags is safe and does not increase the risk of electrolyte imbalance in patients. This is likely due to additional precautions taken by the nutrition support and intensive care unit teams, such as prophylactic electrolyte replacements and strict monitoring, when initiating patients on RTU PN. The association of hypokalaemia with hypophosphataemia in the use of PN indicates that blood testing needs to be stringent and all electrolytes need to be monitored during PN feeding.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH05

Work health orientation programme with nutrition workshop for Changi General Hospital staff: initiative of a health-promoting hospital

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INTRODUCTION This study aimed to examine whether in-house nutrition workshops improve hospital staff's knowledge and attitudes regarding healthy eating.

METHODS In 2013–2015, Changi General Hospital's staff were recruited for this study during orientation sessions and/or through informative posters via staff internal mail. They were invited to attend an hour-long workshop that teaches the importance of healthy eating with particular attention to the healthy diet pyramid. The workshop included a lecture with interactive activities and information sheets. Pre- and post-workshop surveys were conducted to assess knowledge, attitudes and baseline practices. Paired *t*-test was used to determine differences in scores. Results were reported as mean \pm SD.

RESULTS 271 staff, comprising nursing staff ($n = 188$, 69%) and healthcare professionals ($n = 83$, 31%), participated in this workshop. After intervention, participants' knowledge scores on the healthy diet pyramid and recommended serving sizes improved (6.20 ± 1.62 vs.

8.48 ± 1.16 ; $p = 0.015$). We found no significant difference ($p > 0.05$) in nutrition knowledge scores between professions. Participants also demonstrated increased positive attitudes toward the role and importance of nutrition; the greatest increment was in the most positive attitude score ('strongly agree') toward committing oneself to healthier dietary changes (from 21.4% to 31.4%).

CONCLUSION Participants felt that the workshop was effective in motivating them to adopt a healthier diet and boosted their confidence levels in encouraging others to do likewise. The limitation is that there was no follow-up after the workshop and, hence, we were unable to determine if improved knowledge and attitudes have translated into practice. This intervention aims to develop/train nutrition advocates as part of a health-promoting hospital initiative. Our ultimate objective is to improve staff's health status by reducing risks of chronic diseases. For improvement, we hope to measure long-term effectiveness by assessing changes in dietary practices and health outcomes.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH06

Patient activation is associated with better self-management for patients with heart failure

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INTRODUCTION Patient activation refers to the patient's ability and willingness to self-care. This study aimed to determine the association of the Patient Activation Measure (PAM) with patient knowledge and self-care behaviour among adults with heart failure in Singapore.

METHODS 210 patients admitted for heart failure were recruited to be part of a telemonitoring intervention study. Baseline surveys on PAM, domains associated with self-care (Self-Care for Heart Failure Index [SCHFI]), patient knowledge (Dutch Heart Failure Knowledge Scale [DHFKS]) and patient demographics were administered at discharge. For SCHFI, the cut-off score that determines self-care adequacy within the domain was 70. Patients were categorised as either highly activated (Level 4) or others (Levels 1–3). Using this categorisation as the independent variable, bivariate analysis was performed to profile the highly activated patients based on their self-care adequacy and knowledge of condition.

RESULTS Of the 210 patients recruited, 193 patients (mean age 67.0 ± 12.6 years; 60.6% male) completed the surveys. 30.1% were Chinese, 25.9% Malay and 44.0% Indian or others. 14 patients were Level 4-activated and the rest were Levels 1–3-activated. There were no statistically significant differences between the groups in terms of age, gender and race. In terms of comorbidities, 80.0% of Level 4-activated patients had diabetes mellitus, compared to 56.0% of Levels 1–3 patients ($p = 0.046$). Also, significantly more Level 4-activated patients reported good maintenance (50.0% vs. 40.0%), management (58.3% vs. 9.0%) and confidence (71.4% vs. 27.4%) SCHFI scores when compared to Levels 1–3 patients (all $p < 0.05$). There were no significant differences in DHFKS scores between the two groups.

CONCLUSION Highly activated patients appear to be associated with improved self-care but not with patient knowledge. Further work needs to be done to determine if intervention is needed to increase patient activation.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH07

English cognitive communication screener for persons with acquired brain injury

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INTRODUCTION The prevalence of stroke and subsequent vascular cognitive impairment without dementia (VCIND) is increasing rapidly. Patients with VCIND are at risk of conversion to dementia and, hence, early detection of stroke would facilitate appropriate intervention, supporting positive outcomes. The aim of this study was to expand and improve on a previously normed screener for cognitive communication impairments in mild cognitive impairment (MCI) or early dementia populations, for use in other patients with acquired brain injury. This modified screener will facilitate early identification of a range of cognitive communication deficits in English-speaking adults with acquired brain injury in Singapore.

METHODS 60 neurologically intact participants were assessed using the modified screener to collect normative data. 30 (18 female, 12 male) patients were aged 40–59 years and 30 (11 female, 19 male) were aged 60–79 years. The screener was then administered to ten

English-speaking patients with stroke and tracked for changes over three months.

RESULTS Normative data obtained in the two age groups provided a more accurate reference for clinicians, reducing the possibility of age as a confounding factor. The modified cognitive communication screener appeared to be sensitive in identifying cognitive communication deficits in post-stroke patients. It also appeared to have good criterion validity, as changes to patients' performance were also reflected in their Montreal Cognitive Assessment scores.

CONCLUSION The cognitive communication screener for acquired brain injury is a valid, culturally and linguistically sensitive tool that could detect cognitive communication deficits in post-stroke patients. It is also sensitive to changes in cognitive profiles over a three-month period. This will enable better intervention and management options for cognitive deficits after stroke.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH08

Fluoroscopy-guided peripherally inserted central catheter line insertion

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INTRODUCTION This study aimed to: (a) produce a very-low-dose-rate fluoroscopy for peripherally inserted central catheter (PICC) procedure; (b) reduce primary radiation absorbed by patients; and (c) minimise secondary radiation absorbed by health workers.

METHODS In a retrospective analysis, records of PICC line insertions performed from January to July 2015 (n = 339) using normal fluoroscopy rate at 10 pulse/s and from August to December 2015 (n = 238) using low fluoroscopy rate at 7.5 pulse/s were collected and analysed. All PICC line insertions were performed in the angiography suite using the Siemens Artis zee biplane system, and radiation data generated from each procedure was transferred into a picture archiving and communication system for accurate data collection. The equivalent of one year of study data was analysed for accuracy of the report (seven

consecutive months of baseline data and five months of continuous data collection of lower fluoroscopy rates).

RESULTS Statistics summary demonstrated a 60%–70% reduction in fluoroscopy time, dose area product and cumulative dose during the period of August–December 2015 as compared to the January–July 2015 period.

CONCLUSION This study demonstrated that using a lower fluoroscopy pulse rate (7.5 pulse/s) effectively reduces the radiation dosage absorbed by patients and health workers during PICC line insertion procedure without aggravating the image quality. Further studies can be done to evaluate the effect of lower pulse rate in another angio-intervention procedure, so as to potentially reduce overall radiation dosage that patients and staff are exposed to in interventional radiography procedures.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH09

A review of the utilisation of the Medication Assistance Fund Plus scheme: a four-year Changi General Hospital experience

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INTRODUCTION The Medication Assistance Fund Plus (MAF-Plus) scheme is a means-tested financial subsidy for non-standard medications. Introduced in 2011, it is intended to help middle-income patients who find the cost of these medications challenging. All MAF-Plus applications are reviewed by an appointed multidisciplinary committee comprising physicians, pharmacists, medical social workers and hospital administrators. This study aimed to determine: (a) the approval rate and nature of applications for MAF-Plus assistance; and (b) the trend of cumulative utilisation of the MAF-Plus funds.

METHODS All MAF-Plus applications received between October 1, 2011 and December 31, 2015 were included for review. Data collected included the range of medicines (with special emphasis on high-cost items), review approval rates and cumulative percentage of available funds utilised.

RESULTS During the four-year evaluation period, a total of 2,001 MAF-Plus applications were received, of which 1,737 (86.8%)

were ultimately approved. The MAF-Plus Committee approved an expansion in the number of pre-approved medicines, from five in 2011–2012 to 47 by end-2015. Medicines most commonly applied for were intended for treatment of cardiac (24.3%), respiratory (14.7%) and psychiatric (13.5%) conditions. Since 2014, the MAF-Plus scheme has been more extensively used to assist patients requiring high-cost medicines, including those for treatment of retroviral disease, chronic hepatitis C and rare diseases. Cumulative utilisation of MAF-Plus funds grew from 3.3% in 2011–2012 to 38.8% by end-2015, representing a mean year-on-year increase of 151%.

CONCLUSION With the use of a judicious process involving reviews by a multidisciplinary group, a high percentage of applications for utilisation of MAF-Plus funds were successful in the approximately four years since the scheme's introduction. In particular, the scheme has proven useful as a new source of financial assistance for eligible patients, especially for those who may have previously defaulted on their treatment due to high-cost medicines.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH10

A microbiologist-initiated service improved appropriate carbapenem use in patients with bacteraemia

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INTRODUCTION This study aimed to review a microbiologist-initiated service that provided recommendations for antimicrobial use in bacteraemic patients as part of the hospital's antimicrobial stewardship programme.

METHODS A retrospective cohort study was conducted on bacteraemic patients who were treated with carbapenems from January 2014 to March 2015. Clinical microbiologists provided recommendations after reviewing all blood culture results to optimise the antimicrobial therapy. The multidisciplinary stewardship team followed up on the acceptance of these recommendations by the primary team and provided further input if required. The primary outcome was the clinical response rate at Day 7 between two patient groups – recommendations accepted vs. recommendations rejected. Clinical response was defined as being afebrile for a minimum of 24 hours with haemodynamic and respiratory stability, and improving leukocytosis. Secondary outcomes included 30-day mortality, microbiological clearance at Day 7 and 30-day readmission rate.

RESULTS A total of 54 patients were included in the study, of which recommendations for 31 (57%) patients were accepted. De-escalation of carbapenems (46/54, 85%) was the most common recommendation made. Baseline demographics were comparable between the patient groups. No significant difference was seen in the proportion of patients who achieved clinical response (accepted vs. rejected recommendations: 10/31 [32%] vs. 4/23 [17%]; $p = 0.35$). Secondary outcomes including 30-day mortality (accepted vs. rejected recommendations: 6/31 [19%] vs. 6/23 [26%]; $p = 0.74$) and 30-day readmissions (4/26 [15%] vs. 2/16 [13%]; $p = 1.00$) were also similar between groups. All patients who had repeated blood cultures ($n = 17$) achieved microbiological clearance.

CONCLUSION A microbiologist-initiated blood culture service, together with stewardship follow-up to improve carbapenem usage in patients with bacteraemia, did not lead to poorer patient outcomes. Further efforts should be made to improve acceptance rates.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH11

Factors influencing the quality of life of breast cancer patients and their partners at the peridiagnosis phase in Changi General Hospital

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INTRODUCTION This study sought to identify factors affecting the quality of life (QOL) of breast cancer patients and their partners.

METHODS This was a longitudinal, prospective study of all female unilateral breast cancer patients managed at Changi General Hospital in 2009–2014, from the time of diagnosis to 12 months after diagnosis. The cancer management support partner was invited to participate. QOL was measured using Short Form 36 Health Survey. Questionnaires that captured sociodemographic data and cancer care needs were self-administered peridiagnosis during initial treatment. Only data captured at diagnosis was analysed. Bivariate and regression analyses were performed.

RESULTS Mean ages of the patients (n = 180) and partners (n = 111) were 57 ± 11.7 years and 52 ± 13.5 years, respectively. 14.5% of patients had advanced breast cancer (stages 3, 4). 46% of partners were spouses. Patients' QOL peridiagnosis was lower among older

patients ($\beta = -0.4$; $p < 0.01$) and those who felt spouses' acceptance of appearance change was important ($\beta = -0.3$; $p = 0.02$). Getting information on treatment cost ($\beta = 0.3$; $p = 0.03$) and treatment options ($\beta = 0.3$; $p = 0.03$), access to support group ($\beta = 0.4$; $p = 0.02$), clear communication with healthcare provider ($\beta = 0.3$; $p < 0.01$) and time to adapt to appearance changes ($\beta = 0.3$; $p = 0.02$) improved QOL. Partners not counselled regarding patients' appearance change ($\beta = -0.4$; $p = 0.01$) and had no domestic support at home ($\beta = -0.5$; $p = 0.01$) had lower QOL. Receiving information on reconstruction ($\beta = 0.4$; $p = 0.01$), and family ($\beta = 0.5$; $p = 0.02$) and caregiver support ($\beta = 0.3$; $p = 0.02$) improved QOL.

CONCLUSION Psychosocial support, clear communication, counselling to address appearance change and linking up with support groups can improve the QOL of breast cancer patients and their partners peridiagnosis.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH12

Improving the nutritional intake of residents with dysphagia with ready-to-eat functional foods

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INTRODUCTION Dysphagia is a severe condition that occurs as a comorbidity of diseases related to ageing. A reported 60% of elderly patients in long-term care facilities (LTCFs) suffer from some form of swallowing difficulty. This study aimed to evaluate the nutritional intake of residents with dysphagia and assess the impact of ready-to-eat functional foods on weight improvement.

METHODS This was a month-long, noninvasive observational study involving 17 of our nursing home residents who were on puréed diets. Mean age, weight and body mass index (BMI) of the male (n = 10) and female (n = 7) residents were: 73 years and 78 years; 47.1 kg and 42.7 kg; and 18.7 kg/m² and 19.4 kg/m², respectively. For these residents, puréed nursing home meals were replaced with ready-to-eat functional foods. The residents were estimated to be consuming an average of 1,200 kcal and 30–40 g protein/day on puréed nursing home

meals, and an average of 1,400–1,500 kcal and 44–55 g protein/day on functional foods. Beverages/oral nutrition supplements (ONS) were not replaced. The residents' weight and BMI were measured at baseline and the end of the study.

RESULTS 12 out of 17 residents gained weight over the study period; the average weight gain (%)/BMI for male and female residents were 1.3 kg (3%)/19.0 kg/m² and 0.8 kg (2%)/19.6 kg/m², respectively. One female resident experienced no weight change. One female and two male residents experienced weight loss (refusal of meals and poor meal compliance). Another male resident was hospitalised during the trial and nil weight was taken.

CONCLUSION Residents with dysphagia in LTCFs can eat better and increase body weight through a diversified, texture-modified and appealing oral diet that meets their nutritional requirements.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH13

Assessment of a novel heart rhythm monitoring device (Spyder) in the detection of atrial fibrillation in post-stroke patients

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INTRODUCTION The Spyder device is a novel electrocardiography (ECG) monitoring device that is attached to the left side of the chest using adhesive electrodes. It communicates with a mobile phone via Bluetooth, which then transmits the information to a cloud server. It has an automated detection algorithm for atrial fibrillation (AF). The feasibility of this device to detect AF in post-stroke patients has not been previously evaluated.

METHODS This is a prospective cohort study. 25 post-stroke patients wore the Spyder device for four weeks to detect occult AF.

RESULTS Out of 25 patients, 22 (88%) completed the monitoring. One patient could not tolerate the electrodes, one had device failure and one died. Patients wore the device for an average of 15.5 ± 4.4 hours daily. The mean number of phone calls (when there was no data transmission

for > 4 hours) made to each patient was 3.4 ± 1.9 . The main reason for poor compliance was skin irritation ($n = 10$). Two patients had difficulty using the device, and there was caregiver issue in one case. There was no true AF detected in this study. However, the mean number of false-positive AF episodes per patient detected by the automated algorithm was 87 ± 140 . 58% of the false-positive AF was due to noise or artefact, and 40% was due to supraventricular ectopic (SVE). Other rare causes were SVE run (1.6%) and premature ventricular ectopic (0.1%).

CONCLUSION It was feasible to use the Spyder device in most post-stroke patients. Patient compliance was poor mainly due to skin irritation, and false-positive AF episodes detected by the automated algorithm were common.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH14

Magnetic resonance imaging of the knee: replacing 2D acquisitions with 3D reconstructions

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INTRODUCTION The aim of this study was to compare the quality of reconstructed images from a single 3D sequence in the sagittal, coronal and axial planes with directly acquired images using 2D sequences in the same three planes, on magnetic resonance imaging (MRI) knee examinations. Replacing 2D acquisitions with 3D reconstructions would reduce the overall time for MRI knee examinations.

METHODS Images from 30 consecutive MRI knee examinations with both 3D reconstructions and direct 2D acquisitions were reviewed by two radiologists. All images were scored for quality using a scale of 1–5 (1: poorest, 5: optimum) based on the following criteria: edge sharpness; artefacts; contrast between joint fluid and cartilage; contrast between joint fluid and soft tissue; and delineation of ligamentous structures. The mean \pm SD for these criteria were evaluated using Student's independent *t*-test to determine if any difference in perceived image

quality between the 3D and 2D images was statistically significant. A *p*-value < 0.05 was considered statistically significant.

RESULTS Direct 2D acquisition images were significantly better than 3D reconstruction images in terms of edge sharpness (4.17 ± 0.79 vs. 3.87 ± 0.57), artefacts (4.36 ± 0.61 vs. 3.67 ± 1.12), and delineation of ligamentous structures (4.20 ± 0.55 vs. 3.80 ± 0.55). However, direct 2D acquisition images were significantly poorer than 3D reconstruction images in terms of joint fluid/cartilage contrast (3.36 ± 0.67 vs. 4.33 ± 0.66). There was no significant difference between the images in terms of joint fluid/soft tissue contrast (4.00 ± 0.95 vs. 4.03 ± 0.56).

CONCLUSION Overall, based on the criteria, direct 2D acquisitions performed significantly better than 3D reconstructions and, thus, cannot be replaced with 3D reconstructions for MRI knee examinations.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH15

Caregivers' attitudes and concerns toward feeding and swallowing issues in people with dementia

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INTRODUCTION Care burden and stress increases as dementia progresses. A challenge faced by caregivers is coping with feeding difficulties in people with dementia (PWD). This study aimed to understand caregivers' attitudes and evaluate their knowledge regarding feeding difficulties in PWD. The findings would determine if the current practice of information counselling by speech therapists (ST) could be enhanced to improve attitudes, knowledge and stress in this population.

METHODS 25 caregivers of PWD were recruited for the study. A 17-item Dementia and Feeding Questionnaire was developed to capture qualitative and quantitative measures of caregivers' knowledge, attitudes and stressors with regard to feeding difficulties in PWD. This was administered alongside the Edinburgh Feeding Questionnaire and Functional Oral Intake Scale, both before and after ST intervention. ST intervention comprised the current practice of counselling on dementia/cognitive impairment diagnosis and associated cognitive dysphagia, training on diet and fluids preparation and general strategies for safe feeding.

RESULTS Post-intervention questionnaire responses showed an overall improvement in caregivers' attitudes and knowledge regarding feeding difficulties, and a reduction in caregiver stress. Most caregivers reported using self-initiated strategies (e.g. adapt to PWD's food preferences), with the insight that oral intake is largely mood-dependent. Post intervention, there emerged a trend of PWD-led strategies (e.g. allowing self-feeding). Caregivers identified hospital staff, especially geriatricians, as the primary source of information for managing feeding difficulties. Caregivers preferred to receive information via face-to-face counselling, information booklets and support groups. They found it useful to receive follow-up calls on how they were coping at home.

CONCLUSION Caregivers reported that the current scope of ST counselling was sufficient for their needs. A preference for home-based services was noted; hence, the next phase of research could look into the efficacy of providing broad-based training for community care teams to provide basic support for caregivers in the home environment.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH16

Adherence to medications in heart failure patients readmitted to Changi General Hospital

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INTRODUCTION Poor medication adherence among heart failure (HF) patients often results in aggravation of symptoms, leading to rehospitalisation. As it is important to understand the extent of and reasons for nonadherence, our study aimed to: (a) assess patients' knowledge of HF; (b) determine their state of adherence to prescribed HF medications; and (c) evaluate the factors influencing medication nonadherence.

METHODS A cross-sectional study was conducted involving HF patients who had been readmitted between November 2015 and March 2016. Patients completed a questionnaire that assessed their comprehension of instructions pertaining to the correct use of HF medications and familiarity with their medication dosing regimen, the eight-item Morisky Medication Adherence Scale (MMAS-8) and Dutch HF Knowledge Scale (DHFKS).

RESULTS 50 patients were recruited, > 80% of whom were able to understand the instructions on medication use, especially with the

aid of caregivers. Apart from If-channel inhibitors, > 50% of patients were familiar with the dosing regimen of their medications. Almost half of the patients were poorly adherent to medications (MMAS-8 score < 6) and two-thirds poorly understood the topic of HF (DHFKS score < 9). Although patients with secondary or higher education scored better on the DHFKS than those without (mean score 9.2 vs. 6.9; $p = 0.04$), medication adherence rates between these groups were similar ($p = 0.25$). Apart from poor knowledge on medication use (61%), forgetfulness (26%) and low health literacy rates (9%) also served as common barriers to better medication adherence.

CONCLUSION Although HF patients generally understood how they should take their medications, overall medication adherence and knowledge of their condition remained poor. Strategies to improve medication adherence could focus on addressing deficiencies in knowledge, memory and health literacy.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH17

Comparison of two blood culture systems for detection of bloodstream pathogens in the absence and presence of antibiotics

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INTRODUCTION Early detection of bacteraemia enables prompt treatment. Blood cultures may be collected after antibiotic administration, and bacterial recovery rate is dependent on the antibiotic-neutralising ability of absorbent resins in culture media. This study evaluated the performance of two blood culture systems by comparing the time to detection (TTD) of seeded vials in the absence and presence of antibiotics.

METHODS BacT/Alert FAN® Plus media and BACTEC™ Plus media were inoculated with sheep blood and microbial suspensions before incubation into the respective automated systems: BacT/Alert® VIRTUO™ (BacT VIRTUO); and BACTEC™ FX (BactecFX). Testing was performed in duplicate for 29 unique bacterial strains (n = 58 vials). To evaluate antibiotic absorption, two concentrations of vancomycin or ceftriaxone (serum peak and trough levels) were inoculated into culture vials containing sheep blood and microbial suspensions. Testing was performed in duplicate for each organism/antibiotic concentration (n = 44 vials).

RESULTS In the absence of antibiotics, 57 (98%) of tested vials had a faster TTD for BacT VIRTUO compared to BactecFX (median TTD: 9.4 hours vs. 12.3 hours). Shorter mean TTD range was observed for BacT VIRTUO compared to BactecFX (6.0–36.7 hours vs. 7.8–51.3 hours). BacT VIRTUO had an earlier detection rate for all tested organisms (n = 24 vials) at vancomycin base, trough and peak levels (mean TTD: 10.7 hours, 12.1 hours and 16.8 hours, respectively) compared to BactecFX (mean TTD: 12.2 hours, 16.7 hours and 20.6 hours, respectively). At low ceftriaxone concentration, BactecFX is marginally more efficient in recovering organisms than BacT VIRTUO (recovery rate: 28.6% vs. 0%). Both systems were unable to recover organisms in high ceftriaxone concentration.

CONCLUSION BacT VIRTUO has a shorter TTD than BactecFX in the absence of antibiotics and in the presence of vancomycin. Poor recovery rate was observed in both systems when ceftriaxone was added.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH18

Low-dose versus routine computed tomography of kidneys, ureters and bladders: a retrospective review

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INTRODUCTION This study aimed to determine whether increasing the standard deviation (SD) of computed tomography of kidneys, ureters and bladders (CT KUB) from 9 to 15 would reduce the radiation dose to the patient, yet still produce a diagnostic CT image.

METHODS This is a retrospective review involving 118 patients. The patients were divided into two groups (routine vs. low-dose). Data collected from January to March 2016 was grouped under the routine protocol, while data collected in May 2016 was grouped under the low-dose protocol. Only CT KUB (routine and low-dose) performed using Toshiba CT Aquilion One CT scanners were reviewed. The routine protocol used SD = 9, while the low-dose protocol used SD = 15. The

values of the dose length product (DLP) and the effective dose (mSv) for both groups were compared. A survey questionnaire was completed by a consultant radiologist to compare the diagnostic quality of the low-dose versus routine CT KUB.

RESULTS Using the low-dose protocol, an approximate reduction of dose by 36% was observed. Although the low-dose protocol produced slightly noisier images, they were of acceptable diagnostic quality for average-sized patients.

CONCLUSION Low-dose CT KUB has a diagnostic capability similar to a routine protocol when used on an average-sized patient. However, low-dose protocol should be avoided for very obese patients, as the images would be too noisy to be of diagnostic quality.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH19

A caregiver's guide to thickening supplements

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INTRODUCTION Thickened fluids are the most prescribed noninvasive intervention for dysphagia. It works on the principle that the slower flow rate of viscous fluids can reduce aspiration. The viscosity of thickened fluids can be influenced by its milk fat, protein and sugar composition. Time has been identified as a variable in the thickening profile of fluids, although there is no known definitive guide. The aim of the study was to examine the time needed to thicken selected supplements, thus developing a guide to facilitate nurses and caregivers in their preparation.

METHODS 11 oral supplements were thickened with Resource ThickenUp™ Clear following manufacturer's recommendation for nectar- and honey-thick consistencies for 100-mL samples. The samples were tested at the 7th, 10th, 20th and 30th minute for their spread values using the Line Spread Test.

RESULTS NUTREN® Diabetes met the criteria for nectar- and honey-thick consistencies satisfactorily by the 7th minute. RESOURCE® 2.0, RESOURCE Plus (Vanilla) and Isocal met the criteria by the 20th minute. Diben® (Vanilla), Novasource® and Fresubin® 2kcal (Vanilla and Cappuccino) met the criteria by the 30th minute. Ensure Plus® (Vanilla and Chocolate) and Diben (Cappuccino) were not able to meet the criteria by the end of 30 minutes.

CONCLUSION This guide facilitated nurses and caregivers in their preparation by providing an approximate waiting time for the prescribed supplements to thicken sufficiently. An incidental finding was the discard time or the point of time when supplements have thickened beyond the desired consistency. Thus, the discard time is a factor that needs to be considered in the prescription of supplements for patients who may require a longer meal time. It is an area for future research.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH20

Validity and efficacy of an interprofessional model of education for musculoskeletal physiotherapists

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INTRODUCTION This study aimed to investigate whether: (a) an interprofessional model of education is efficacious in increasing clinical competency in handling complex musculoskeletal patients; (b) there is inter-rater reliability between experienced physiotherapists in qualitative assessment of clinical competency; and (c) there is significant correlation between self-assessment of competency and the true level of clinical competency.

METHODS We designed an interprofessional training programme and implemented it on eight non-rotating physiotherapists with three years of clinical experience in the musculoskeletal physiotherapy team. Pre- and post-training tests were administered in the form of three clinical case studies each. Questions associated with these case studies were centred around the themes of clinical problem-solving, reasoning and decision-making. The qualitative test answers were scored by three experienced physiotherapists who had completed their postgraduate musculoskeletal Master's degree and had > 5 years of clinical experience. Pre- and post-training changes in test perfor-

mance and inter-rater reliability in assessment among the assessors were explored. Nonparametric tests were used in view of the small sample size.

RESULTS All eight non-rotating physiotherapists finished the programme. There were significant changes from pre- to post-test results ($p = 0.005$). There was also a significant increment in self-assessed clinical competency ($p = 0.010$). Inter-rater reliability between markers reached significant levels both with pre-test (Cronbach's $\alpha = 0.906$) and post-test (Cronbach's $\alpha = 0.899$) marking. There were significant correlations between pre- and post-test scores ($p = 0.037$), but no significant correlations between self-assessed clinical competency and test scores ($p = 0.826$ and 0.641 , respectively).

CONCLUSION An interprofessional training programme has proven to be efficacious in improving both objective and self-assessment of clinical competency. Qualitative assessment of clinical competency reached significant levels of inter-rater reliability among experienced assessors.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH21

Knowledge and beliefs associated with travel health-planning among Singapore residents

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INTRODUCTION For a country with a population of approximately 5.5 million people, over 8 million overseas trips were made by Singapore residents in 2012. Apart from investigating their travel habits, this study explored the pre-travel planning concerns of Singapore residents, with special emphasis on issues pertaining to vaccination, medical consultation and travel insurance.

METHODS Visitors to a travel medicine booth at our institution during World Immunisation Week completed a simple questionnaire. Whenever necessary, a pharmacist clarified any queries and/or assisted with the completion of the questionnaire.

RESULTS We received 218 completed questionnaires. Respondents reported having travelled recently to destinations in Southeast or Northeast Asia, and that these trips were mainly family-centric, involved air travel and for leisure purposes. Interestingly, 23.0% of respondents admitted to having engaged in a physical activity involving an element of danger while abroad. The majority of respondents (75%) planned to travel again to a regional destination within the next six months.

The most popular destinations were Southeast Asia (38.3%), Northeast Asia (26.7%) and Europe (11.2%). When planning a trip, issues pertaining to financial costs (13.9%), accommodation (12.8%) and transportation (11.8%) were the primary concern. Internet websites (28.0%) were the commonest source of travel information, followed by friends (20.3%) and family members (14.3%). Approximately 70% would prepare a travel medicine kit and/or purchase travel insurance. However, only 34.8% of respondents would consider getting vaccinated or seeking pre-travel advice from a healthcare professional or travel-medicine clinic prior to departure.

CONCLUSION Our results suggest that Singapore residents will continue to travel extensively to destinations located within six hours (by air). Practical issues featured prominently in the travel planning of residents. While respondents were likely to prepare a travel medicine kit or seek travel insurance, there appeared to be an alarmingly low level of importance attached to pre-travel vaccination.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH22

Review of a new department guideline: safe use of central venous catheters for contrast injection using power injector

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INTRODUCTION In previous computed tomography (CT) imaging guidelines, the maximum flow rate and injection pressure (PSI) were set at 2 mL/s and 100 PSI, respectively, regardless of the type of central venous catheter (CVC) used. This is suboptimal, especially for CT angiography, which requires significantly higher injection flow rate and pressure. Diagnostic performance of CT angiography had been consistently and significantly impaired using this guideline. Hence, an impetus was formed to evaluate a new injection protocol to improve diagnostic performance without compromising patient safety. This retrospective review evaluated the safety profile and complication rate from the new CT imaging guideline for contrast administration via CVCs.

METHODS An extensive literature review was done to determine the feasibility of safe, off-label usage of CVC for contrast injection.

A new CT imaging guideline was created. Depending on the type of CVC used, the flow rate and PSI were adjusted significantly higher to achieve optimal study quality. Contrast agent of lower viscosity was also mandated to minimise the effect of increased PSI during injection. Following the implementation of the new guideline, 20 CT cases using CVC for contrast injection were retrospectively reviewed.

RESULTS No complication to the patient or the CVC was found in all 20 patients who received contrast via the CVC. This confirmed the safety profile and utility of the new protocol.

CONCLUSION Radiographers were able to safely power-inject contrast via the CVCs for CT following the new CT imaging guideline. This guideline provides an excellent alternative for patients with CVC who require contrast CT, but have failed or poor peripheral access.

CATEGORY: ALLIED HEALTH

EHASM2016-POSTER-AH23

Factors influencing the human gut microbiome profile in multiethnic groups of the Singapore community

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INTRODUCTION The objective of this study was to examine the effects of ethnicity, gender and proton pump inhibitor (PPI) on the human gut microbiome. PPIs are commonly used for the treatment of acid-related disorders. We hypothesised that PPI therapy (omeprazole) might perturb microbial communities and alter the gut microbiome.

METHODS Healthy subjects, aged 21–37 years, who were of Chinese (n = 12), Malay (n = 12) and Indian (n = 10) ethnicities were enrolled. Participants provided a baseline stool sample (Day 1) and were then given a course of omeprazole at therapeutic dose (20 mg daily) for seven days. Stool samples were collected again on Day 7 and Day 14 (one week after stopping omeprazole). Microbial DNA was extracted from the stool samples. This was followed by polymerase chain reaction, library construction, 16S rRNA sequencing using Illumina MiSEQ, and statistical and bioinformatics analyses.

RESULTS The findings showed an increase in species richness ($p = 0.018$) after omeprazole consumption on Day 7, which reverted to baseline on Day 14. There were significant increases in the relative abundance of *Streptococcus vestibularis* ($p = 0.0001$) and *Veillonella dispar* ($p = 0.0001$) on Day 7, which diminished on Day 14. *Faecalibacterium prausnitzii*, *Sutterella stercoricanis* and *Bacteroides denticanum* were characteristic of Chinese, Malay and Indian participants, respectively. *Lactobacillaceae* and *Bacteroides xylanisolvens* were signature taxa of male and female participants, respectively.

CONCLUSION The study demonstrated that there were alterations in the gut microbiome following omeprazole treatment. This may explain the underlying pathology of increased risk of *Clostridium difficile* infections associated with omeprazole therapy.

CATEGORY: MEDICAL

EHASM2016-POSTER-M01

Assessment of public awareness of chronic obstructive pulmonary disease in Singapore through an awareness campaign

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INTRODUCTION This study aimed to assess current public awareness of chronic obstructive pulmonary disease (COPD) during a COPD event held in a shopping mall in Singapore.

METHODS A set of 12 questions investigating basic knowledge and awareness of COPD was adapted from the ten-item Athens COPD awareness questionnaire (ACAQ). The questionnaire comprised four demographic, seven COPD-related and one contextual questions. The subjects were members of the public aged ≥ 18 years who were conveniently sampled during a COPD awareness campaign organised outside a shopping mall on November 21, 2015.

RESULTS A total of 82 male and 78 female subjects were surveyed. 65% had never heard of COPD. Of the 35% who have heard of COPD, 90% were unaware that COPD refers to chronic bronchitis and emphysema, while 28% incorrectly identified the commonest symptoms. The

awareness level of smokers was lower (9%) than non-smokers (35%). 31% of smokers had the misconception that COPD is pneumonia. Among those surveyed, 32.5% were unaware that COPD is a top ten cause of death in Singapore, 25% incorrectly identified COPD as a contagious disease, and 12.5% had the misconception that current or ex-smokers are not at a higher risk of COPD. Our results are comparable to the Athens study conducted in 2002, which found that 72% of participants who had heard of COPD (47% of surveyed) were unaware of what it was.

CONCLUSION In summary, awareness of COPD among the Singapore public is low, highlighting the need for interventions aimed at educating the public. This study had inherent limitations due to selection bias, use of English- and Chinese-only questionnaires, and a small sample size. A multilingual survey with a larger sample can be replicated to validate the findings of this study.

CATEGORY: MEDICAL

EHASM2016-POSTER-M02

A 24/7 hospital toxicology service: experience of a new start-up

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INTRODUCTION A 24/7 toxicology service providing phone consultation for the hospital was established in November 2014. The objective of this study was to report and analyse the poisoning data of patients referred to the toxicology service.

METHODS A retrospective quarterly review of all patients referred to the toxicology service was conducted from July to September 2015. Epidemiological and clinical data was collected and analysed. Certainty of poisoning was graded by two reviewers, and severity of poisoning was graded using the Poisoning Severity Score (PSS).

RESULTS A total of 88 cases were referred to the toxicology service, but two cases were excluded, as the calls came from other hospitals. The majority of cases were referred from the Emergency Department (74%), followed by the Short Stay Unit (SSU; 21%); three cases were from inpatient wards. 52% were female, with a majority of Chinese (65%). The middle-aged group (30–39 years)

was the commonest (29%). The commonest cause of poisoning was deliberate self-harm (69%) followed by accidental poisoning (17%). Analgesics (26%) and sedatives (16%) were the most frequently implicated poison classes, with a probable to definite certainty of poisoning in 92%. About 73% of cases had mild poisoning with a PSS score of 0–1, while 23% had moderate-to-severe poisoning (PSS 2–3). About 6% of patients were treated with decontamination and 14% with specific antidote. 71% of patients were admitted to SSU, 10% to general wards and 6% to either the intensive care unit or high-dependency wards. A majority of patients had uneventful recovery during hospital stay. Of the three fatalities, two had cause of death related to poisoning.

CONCLUSION Although most poisoning cases resulted in mild clinical effects, a small but significant number of severe acuity cases occurred in this small cohort.

CATEGORY: MEDICAL

EHASM2016-POSTER-M03

Left- versus right-sided perforated diverticulitis: is there a difference?

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INTRODUCTION Despite a higher incidence of right-sided diverticulitis in Asians, data comparing the incidence and outcomes of right- and left-sided perforated diverticulitis remain limited. This study aimed to describe and compare disease characteristics and outcomes of acute left- and right-sided perforated diverticulitis in a cohort of Asian patients.

METHODS We performed a retrospective, descriptive cohort review of an institutional review board-approved database of 114 patients admitted to Changi General Hospital with acute complicated diverticulitis from November 2004 to February 2013. Of these, 15 patients presenting with strictures and/or fistulas were excluded from analysis. Data on patient demographics, disease characteristics, management and outcomes was collected and analysed.

RESULTS Out of 99 cases with perforated diverticulitis, 49 (49.5%) were right-sided. Of those who underwent surgery, 17/39 (43.6%) had

right-sided disease. Of these 17 patients, 10 (58.8%) were misdiagnosed preoperatively as having appendicitis, which should have been treated conservatively (Hinchey I and II). Left-sided perforated diverticulitis had a more severe disease presentation, with 20/50 (40%) patients requiring immediate surgery compared to 7/49 (14.3%) patients with right-sided disease ($p = 0.004$). Age-specific comparison showed that younger patients (age ≤ 50 years) had higher rates of right-sided perforated diverticulitis, while older patients (age > 50 years) more frequently had left-sided disease (35/50 [70%] vs. 35/49 [71%]; $p < 0.001$).

CONCLUSION Based on our study, right-sided perforated diverticulitis appears less severe than left-sided disease, and is more common in younger patients. Furthermore, local clinicians should be wary of misdiagnosing complicated diverticulitis as acute appendicitis, which would result in unnecessary surgical intervention.

CATEGORY: MEDICAL

EHASM2016-POSTER-M04

Efficacy and safety in the management of paracetamol poisoning treated with n-acetyl cysteine in a 23-hour observation unit of an emergency department: a comparison with standard inpatient care

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INTRODUCTION This study aimed to evaluate the impact of an established Short Stay Unit (SSU) poisoning protocol in managing patients with paracetamol poisoning requiring n-acetyl cysteine (NAC) treatment in our hospital. We hypothesised that such patients can be managed in the SSU without significant adverse outcome, with a 25% reduction in length of stay.

METHODS Patients admitted to the SSU with International Classification of Diseases code 965 in the years 2011 and 2014 were traced. We included those with paracetamol poisoning treated with NAC for > 20 hours. Patients who did not complete or require the standard 20–21-hour NAC treatment were excluded from analysis. Patients with liver injury (Poisoning Severity Score > 1) at presentation or deemed unsuitable for SSU admission were also excluded. Inappropriate NAC use was defined as NAC treatment

without biochemical or clinical indications. Data was collected for a descriptive comparative study between patients admitted to the wards and SSU. Statistical analyses were performed using data analytic software on graphpad.com.

RESULTS A total of 81 patients were included in the study; 58 and 23 patients were admitted to the wards and SSU, respectively. Age, gender, severity of poisoning, NAC treatment duration and adverse reaction rates were similar in the groups. There was no significant difference in patient outcome, except for a 47% reduction in length of stay in SSU compared to wards (25.6 ± 2.56 hours vs. 48.4 ± 4.55 hours; $p < 0.0001$). Inappropriate NAC use was reduced by 75% in the SSU group ($p < 0.0001$).

CONCLUSION Based on our findings, patients with paracetamol poisoning requiring standard NAC treatment can be safely managed in the SSU while reducing length of stay and inappropriate NAC use.

CATEGORY: MEDICAL

EHASM2016-POSTER-M05

Prescribing patterns in the maintenance phase of patients with bipolar disorder in an outpatient setting

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INTRODUCTION We aimed to explore prescribing patterns in maintenance treatment of bipolar disorder patients in an outpatient setting.

METHODS We studied the case notes of patients with bipolar disorder in remission who were seen in an outpatient bipolar disorder clinic of Changi General Hospital from December 2014 to March 2015. Data describing patient age, gender, type of bipolar disorder and psychotropic medication prescribed was obtained.

RESULTS A total of 42 patients were included in the study; 17 (40.5%) and 25 (59.5%) patients had bipolar I and II disorders, respectively. Mood stabilisers prescribed included: lamotrigine (45.2%); quetiapine (31.0%); valproate (23.8%); lithium (21.4%); olanzapine (16.7%); risperidone (14.3%); aripiprazole (7.1%); and sulpiride (2.4%). When lithium was used, it was in combination with at least one other mood stabiliser in all instances. Antidepressants

were used in 19/42 (45.2%) patients; selective serotonin reuptake inhibitors and noradrenaline dopamine reuptake inhibitors were the commonest, with 7 (36.8%) patients each. All but one patient on antidepressants were on combination treatment with mood stabilisers.

CONCLUSION A large number of bipolar disorder patients on antidepressants are stable. Atypical antipsychotic use is more frequent than lithium use. This infrequent use of lithium is in contrast to its strong evidence in bipolar disorder prophylaxis, even as a monotherapy. It appears that clinicians are reluctant to start their patients early on lithium, which could lead to greater overall benefits. Overall, our study found that prescription pattern was cautious, in that antidepressants were usually prescribed in combination with mood stabilisers. This study could be improved with further information on duration of remission and a larger cohort.

CATEGORY: MEDICAL

EHASM2016-POSTER-M06

A survey of resident's perception of medical emergency team and its contribution to training in acute medicine: how residents met their training

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INTRODUCTION Medical emergency teams (MET) exist in many hospitals as part of their rapid response systems. There is value in training residents in managing and rescuing inpatients with urgent medical needs. The literature on residents' experience in MET is limited. In this study, we explored residents' perception of MET and its contribution to their training.

METHODS Junior and senior residents were exposed to MET during their rotation to Changi General Hospital's medical intensive care unit. They were either a team leader or a member. A survey was conducted among 106 residents over a three-year period. Responders were asked to rate their perceptions from 1 to 5 on a Likert scale, with 1 being 'strongly disagree' and 5 'strongly agree'. We used non-parametric Mann-Whitney and Kruskal-Wallis tests to determine statistical significance.

RESULTS There were 66 respondents, giving a response rate of 62.3%. 24 (36.4%) respondents were junior residents and 42 (63.6%)

were registrars or senior residents in respiratory medicine or advanced internal medicine. Residents in postgraduate years 1–3 felt less strongly that 'no formal teaching or assessment is needed' (median score 2.0), while residents in postgraduate years 4–6 and ≥ 7 years (both median score 3.0) tended toward it ($p = 0.04$). More than 90% of residents agreed that MET contributed positively to patient care and their training, and made resuscitation of patients safer and more efficient; however, they disagreed that MET made resuscitation of patients more time-consuming or cumbersome.

CONCLUSION Most residents perceived that MET contributed positively to their training and management of patients with urgent medical needs. Residents in later postgraduate years tended toward formal teaching or assessment. This may reflect the level of training, as most in this group are senior residents who make executive decisions, whereas those in the early postgraduate years make fewer decisions as team members.

CATEGORY: MEDICAL

EHASM2016-POSTER-M07

Raised preoperative carcinoembryogenic antigen as a risk factor for recurrence in non-metastatic rectal cancers: identifying factors for intensive surveillance strategies

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INTRODUCTION Western surveillance guidelines advocate pre-treatment carcinoembryogenic antigen (CEA) levels > 7.5 ng/mL as a risk factor requiring intensive surveillance strategy (ISS). Based on recommendations, further evaluation of this is warranted. With a lack of Asian surveillance guidelines, we aimed to demonstrate the need for ISS in patients with raised preoperative CEA (> 5.0 ng/mL) in a cohort of non-metastatic rectal Asian cancer patients treated with curative intent.

METHODS 127 non-metastatic rectal cancer patients treated in our unit over a five-year period (2004–2009) with curative intent were identified from the hospital database. Appropriate surveillance was employed accordingly for a subsequent period of five years (till 2014). Information regarding patient demographics, treatment, CEA levels, cancer specific survival outcomes and surveillance strategy was then retrospectively analysed.

RESULTS The incidence of Stage I, II and III rectal cancer in our cohort was 19.7%, 42.5% and 37.8%, respectively. 53 (41.7%) patients had elevated preoperative CEA at diagnosis and 32 (25.2%) had a recurrence. 20 (15.7%) patients had both elevated preoperative CEA and recurrence, of which 80% of recurrence occurred within two years of treatment. The relative risk of a patient with an elevated preoperative serum CEA having a recurrence within the five-year surveillance period was 2.09 (95% CI 1.1047–3.9705; $p = 0.0235$).

CONCLUSION Raised preoperative CEA was a risk factor for recurrence in 62.5% of the recurrent cases in our cohort who had elevated preoperative CEA. 80% of these cases recurred within the first two years of surveillance. This study has identified a group of patients within our curative rectal cancer population who warrants post-treatment ISS.

CATEGORY: MEDICAL

EHASM2016-POSTER-M08

Knowledge of the Mental Capacity Act and its application among doctors working in Changi General Hospital: an informed medical workforce survey

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INTRODUCTION This study assessed doctors' knowledge of the 2008 Mental Capacity Act (MCA) and their experience with its application while working in Changi General Hospital.

METHODS All medical staff from ambulatory specialities (sports medicine, accident and emergency medicine and radiology) who attended weekly teaching sessions held at the hospital in October 2015 were approached to complete a questionnaire survey on the MCA and its application. By completing the questionnaire, the participants provided implied consent to participate in the study.

RESULTS A total of 75 medical staff were approached, and all agreed to participate, yielding a response rate of 100%. Two questions on statutory principles yielded correct response rates of 58.7% to 100.0%.

The third question, 'Mental Capacity Act, Singapore has 4 statutory principles' had the lowest rate of correct responses. Two questions on best interest principle received good correct response rates of 76.0% and 73.3%. Questions on lasting power of attorney yielded variable correct response rates of 37.3% to 76.0%. 46.7% of participants responded that they applied the MCA in their clinical practice and gave examples of its applicability.

CONCLUSION Doctors in ambulatory specialities appear to have reasonably good knowledge and awareness of the application of the MCA in their clinical practice. We recommend that all doctors continue to enhance their knowledge in this domain, in order to deliver high-quality patient care and to maintain partnerships with patients who may lack capacity to consent to care and treatment.

CATEGORY: MEDICAL

EHASM2016-POSTER-M09

Incidence and risk factors of post-stroke seizures

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INTRODUCTION We aimed to identify the incidence of post-stroke seizures and their associated risk factors in stroke patients at Changi General Hospital.

METHODS This was a retrospective study of 615 stroke patients discharged from a neurorehabilitation facility from 2008 to 2015. With IRB approval, the following data was collected: demographics; type of stroke; stroke territory; admission electrolytes; premorbid drugs; comorbidities; neurosurgical intervention; and use of statins, antidepressants and neurostimulants.

RESULTS The average age was 64.6 years, with a male-to-female ratio of 380:235 (61.78% vs. 38.21%). The distribution of stroke types was: ischaemic 316 (51.38%); intracerebral bleeds 168 (27.31%); and cardioembolic 131 (21.30%). 38 (6.17%) patients who had fits received antiepileptics. Cerebral bleed and cardioembolic stroke patients (OR 3.67, 95% CI 1.65–8.15; $p = 0.001$ and OR 2.53, 95% CI 1.03–6.23; $p = 0.044$, respectively) were more likely to have seizures than those

who had ischaemic stroke. Multivariate analysis showed that cerebral bleed patients (95% CI 1.66–19.35; $p = 0.006$) and patients who had neurosurgical intervention (95% CI 2.56–12.71; $p < 0.001$) were 5.7 times more likely to have seizures. Those who were prescribed madopar/bromocriptine for neurostimulation were also more likely to have seizures (OR 3.98, 95% CI 1.62–9.75; $p = 0.003$). Patients on statins and those who were treated for raised intracranial pressure during the early phase of stroke were less likely to have seizures (OR 0.33, 95% CI 0.15–0.73; $p = 0.006$ and OR 0.30, 95% CI 0.10–0.94; $p = 0.040$, respectively).

CONCLUSION Post-stroke seizures are more likely to occur in patients who had intracerebral bleeds and cardioembolic strokes. Prophylaxis and closer monitoring of these patients are helpful. Patients with neurosurgical intervention are at a higher risk of seizures. While neurostimulants may increase the risk of seizures after stroke, statins may help reduce it.

CATEGORY: MEDICAL

EHASM2016-POSTER-M10

Malignant breast nodules on computed tomography: imaging features with histopathological correlation

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INTRODUCTION This study evaluated the computed tomography (CT) imaging characteristics of malignant breast nodules in hopes that the findings will assist general radiologists to further characterise incidentally detected breast nodules, which would allow for timely referral to breast imagers.

METHODS Using our local institutional breast cancer registry, we retrospectively evaluated the CT appearances of malignant breast lesions with histological correlation. Various features including size, shape and margins were analysed, with particular attention given to their attenuation values.

RESULTS We evaluated 63 histologically proven malignant breast lesions and 21 histologically proven benign lesions. 84.1% ($n = 53$) of malignant lesions were invasive ductal carcinoma not otherwise specified, with the remainder composed of invasive lobular carcinoma, mucinous carcinoma, malignant phyllodes and ductal carcinoma

in situ. The benign lesions included a collection of fibroadenomas, intraductal papillomas and fibrocystic change. Malignant nodules demonstrated a mean attenuation value of 79.9 HU, which was significantly different from normally enhancing breast parenchyma (mean 24.0 HU; $p < 0.001$). At a cut-off at 47 HU, CT demonstrated 98% sensitivity and specificity, with both 98% negative and positive predictive values for malignancy. 78% and 13% of malignant lesions demonstrated irregular margins and spiculated margins, respectively. Benign lesions demonstrated a mean attenuation value of 52.3 HU. The mean attenuation difference between malignant and benign lesions is about 27 HU.

CONCLUSION Malignant breast nodules are often markedly enhancing on CT. Combined with other features such as irregular margins, this imaging characteristic could guide the reporting radiologist toward appropriate breast imaging referral for further evaluation.

CATEGORY: MEDICAL

EHASM2016-POSTER-M11

Treatment gaps in osteoporosis are more prevalent in patients aged below 65 years in a regional general hospital setting in Singapore

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INTRODUCTION We aimed to assess the treatment gaps in patients presenting with fragility fractures, particularly in those younger than 65 years.

METHODS This was a retrospective analysis of patients presenting with fragility fracture. Data was extracted from all admissions between December 2013 and December 2014. Patient demographics, fracture site, and calcium, vitamin D and antiresorptive treatment initiation status one year post admission were recorded. Serum 25-hydroxy-vitamin D and bone mineral density (BMD) levels were documented. Patients were divided into two groups: < 65 and ≥ 65 years.

RESULTS There were 94 (18.0%) and 427 (82.0%) fractures in the < 65 and ≥ 65 years groups, respectively. There was a male predominance in the younger group (56.0% vs. 25.0%). Fracture types were different in the younger group compared to the older group: hip (36.2% vs. 57.0%; $p < 0.001$); vertebral (18.7% vs. 31.2%; $p = 0.024$); distal wrist (20.9% vs. 3.1%; $p < 0.001$); and humerus (11.0% vs. 3.1%; $p = 0.002$).

In younger patients, BMD measurement was significantly less frequent (35.2% vs. 61.0%; $p < 0.001$), as was the initiation of antiresorptive treatment (12.1% vs. 37.1%; $p < 0.001$). Vitamin D measurement was uncommon and median values were low in the younger group (19.1 ug/L vs. 22.0 ug/L; $p = 0.27$). The rate of vitamin D and calcium supplementation was significantly lower in the younger group (4.4% vs. 17.4%; $p = 0.003$).

CONCLUSION Patients aged < 65 years presenting with fragility fracture had a male predominance and a higher percentage of distal wrist and shoulder fractures. Vitamin D insufficiency was prevalent. Treatment gaps were more widespread in patients aged < 65 years, with significantly lower rates of BMD measurement, calcium and vitamin D supplementation and initiation of antiresorptive treatment. This highlights opportunities for osteoporosis liaison services in Singapore regional hospitals to improve care and reduce further fractures in this population.

CATEGORY: MEDICAL

EHASM2016-POSTER-M12

Risk factors associated with trigger finger: a case-control study

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INTRODUCTION Trigger finger is a common disorder presenting in primary care. Previous studies have investigated the role of occupational factors in trigger finger. We aimed to identify non-occupational risk factors, such as home, recreational and sports-related activities, associated with trigger finger.

METHODS We undertook this case-control study from May 2014 to May 2015. We recruited 120 subjects with trigger finger who were individually matched with a single control by age and gender. Exposure studied included: home activities (e.g. handwashing of clothes, typing, writing, sewing, use of small hand tools, sweeping/mopping, frying); handloading activities (e.g. carrying bags using fingers or boxes using a crimp grip); and recreational and sports-related activities (e.g. cycling, bowling, racket sports, golf, playing musical instruments, gardening). The associations between trigger finger and each exposure were analysed using univariate logistic regression.

RESULTS 78.3% of the patients presented at the age of 50–69 years. The most commonly affected digit was the middle finger (43.3%), followed by the ring finger (28.3%), thumb (14.2%), index finger (13.3%) and little finger (0.8%). 10.8% of cases reported a positive family history of trigger finger. 23.3% had multiple trigger fingers. Univariate logistic regression showed that those who were more likely to develop trigger finger had diabetes mellitus (OR 1.88, 95% CI 0.78–4.53; $p = 0.16$), engaged in frying food (OR 1.81, 95% CI 0.86–3.80; $p = 0.12$), carried bags using fingers (OR 1.40, 95% CI 0.66–2.94; $p = 0.38$) and carried heavy objects using a crimp grip (OR 2.76, 95% CI 0.96–7.90; $p = 0.06$). None of these factors achieved statistical significance.

CONCLUSION This study did not find any association between the non-occupational factors and trigger finger. Given that previous studies have also found no conclusive association between trigger finger and the workplace, the causes of trigger finger may be multifactorial in each individual.

CATEGORY: MEDICAL

EHASM2016-POSTER-M13

Preoperative anxiety and ease of insertion of laryngeal mask airway – comparison between day surgery patients undergoing minor breast surgery and wisdom teeth extraction: a pilot study

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INTRODUCTION Anxiety is an unpleasant emotion that may adversely impact the conduct of anaesthesia. We had noticed that anaesthesia induction and laryngeal mask airway (LMA) insertion appear more difficult in anxious patients undergoing minor breast surgery (BS). Using the Spielberger State-Trait Anxiety Index (STAI), we measured the anxiety level in women prior to BS and wisdom teeth surgery (DS), and correlated this with the ease of LMA insertion and presence of surgically induced movements. We also reviewed the utility of the visual analogue scale (VAS) for measuring anxiety, comparing it to STAI.

METHODS We interviewed 107 American Society of Anesthesiologists class I/II BS and DS female patients before surgery, using a questionnaire that included STAI and VAS. Armoured LMA (ALMA) was inserted after standard general anaesthesia induction, and independent observers recorded the ease of ALMA insertion and presence of surgical movements.

RESULTS Mean STAI values were 40.0 and 42.0 in the BS and DS groups, respectively, while corresponding anxiety VAS values were 48.5 mm and 50.5 mm. These values were not statistically different between groups. ALMA insertion time was longer in the DS group, but more patients in the BS group moved after surgical incision. When anxiety was defined as STAI > 48, the percentages of anxious patients were 28.8% (overall), 24.4% (BS) and 32.7% (DS). Although a higher proportion of anxious patients had surgical movements and longer ALMA insertion time, these differences were not significant.

CONCLUSION There were high proportions of anxious patients in the BS and DS groups. Although not statistically significant, a higher proportion of anxious patients moved in response to surgical incisions and took a longer time for ALMA insertions. Anxiety VAS is a simple and useful method for measuring preoperative anxiety. If anxiety is detected, remedial measures should be implemented to improve patient comfort and success of anaesthesia and surgery.

CATEGORY: MEDICAL

EHASM2016-POSTER-M14

Smoker types and quit rates: can e-cigarettes be of benefit?

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INTRODUCTION Tobacco use is a significant risk factor for chronic disease. In recent years, e-cigarettes (ECs) have gained popularity worldwide as an aid toward smoking cessation, despite conflicting evidence for their safety and efficacy. Proponents of ECs suggest that ECs can more effectively satisfy a smoker's craving compared with licensed nicotine replacement therapies (e.g. nicotine gum), by also satisfying the psychological aspects and habitual rituals of smoking. This study aimed to review the relationship between smoker types and cessation rates, and determine whether our findings support the use of ECs.

METHODS This was a retrospective study of all patients enrolled into our inpatient smoking cessation programme from June 2008 to June 2015. Sociodemographic data was collected and a 12-part questionnaire to evaluate smoker types was administered. Smoker types were scored based on nicotine, habitual or psychological dependence, with each domain given a maximum score of 4. Patients were followed up by phone interview to assess smoking status.

RESULTS A total of 2,722 patients were enrolled. Mean age was 53 (range 15–93) years. 94.4% were male (n = 2,570). 27.6% of patients were abstinent at six months of follow-up (n = 750). Initial analysis revealed the following significant predictors of smoking cessation: marital status; age at smoking initiation; and Fagerstrom Test for Nicotine Dependence (FTND) scores. Smoker type scores were also related to quit rates, with non-quitters having higher mean nicotine (2.7 vs. 2.4; p < 0.001) and habitual (1.9 vs. 1.8; p = 0.009) dependence scores. However, logistic regression analysis showed that only nicotine dependence remained an independent predictor for smoking cessation.

CONCLUSION Both habitual and psychological dependence do not appear to affect smoking cessation rates. Our findings suggest that the use of ECs as a source of nicotine delivery is unlikely to provide incremental benefits compared with traditional pharmacotherapy aids.

CATEGORY: MEDICAL

EHASM2016-POSTER-M15

Are too many hands present? A study of manpower utilisation during medical emergency team activations

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INTRODUCTION Ward staff that attend to a medical emergency team (MET) episode in their ward are often taken away from tasks required for other patients under their care. Efficient use of available ward staff can ensure effective MET response and continued quality care for the other inpatients. This study observed how manpower was utilised in MET activations.

METHODS A convenience sample of MET activations (n = 15) were observed during office hours (8 am to 5 pm) on weekdays from April to May 2016 at Changi General Hospital. An independent study investigator collected real-time observations. Staff members were identified as playing an 'active role' if they were involved in active preparation or administration of any form of treatment to the patient.

RESULTS The three commonest types of MET activations were for hypotension (n = 6), acute mental state change (n = 4) and desaturation

(n = 3). Median (IQR; range) number of staff present upon arrival of MET was 8 (7, 9; 3–16). Median (IQR; range) number of staff with no active roles upon arrival of MET was 3 (2, 5; 0–6). Median (IQR; range) percentage of staff with no roles per activation was 37.5% (25.5%, 50.0%; 0%–55.5%). It was observed that the average number of staff present varied between different types of MET activations. The mean number of staff with active/no active roles was 6.50/2.25 for respiratory, 4.50/3.67 for neurological and 3.83/3.17 for circulatory activations.

CONCLUSION There appears to be a significant number of staff without active roles during MET activations. There was also an observed difference in the number of actively involved staff present in various activations, with respiratory and circulatory activations having the most and least number of actively involved staff, respectively.

CATEGORY: MEDICAL

EHASM2016-POSTER-M16

Changing demography of asthma attendances in Singapore: a six-year observation study in a public primary care institution

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INTRODUCTION Asthma is the commonest chronic respiratory disease affecting patients of all age groups in Singapore. Suboptimal asthma control leads to repeated airway inflammations, resulting in irreversible airway structural changes over time. Earlier studies have shown ethnic variations in asthma control among local patients with asthma who are managed in public polyclinics. Consequently, we postulated that healthcare utility would vary with patients' demographic characteristics, which would be reflected in their attendances at polyclinics. The results will provide insight into the changing asthma disease burden in association with asthma control over time.

METHODS De-identified aggregate asthma data from nine polyclinics over the preceding six years was retrieved from the institution's national asthma programme and clinical quality database. This data, including the number of asthma patient attendances for consultations and rescue therapies for exacerbations, demographic characteristics, referrals to specialist clinics and hospital emergency departments for failed rescue therapies, was audited and analysed.

RESULTS The overall asthma attendances increased from 27,345 in 2010 to 34,580 in 2015, with the highest rise in patients aged 60–69 years. Females (56.0%) had higher asthma attendances. Patients of Malay ethnicity (25.9%) constituted a disproportionately higher proportion of asthma attendances than patients of Chinese (54.2%), Indian (13.6%) and other (6.3%) ethnicities. The proportion of patients who achieved good asthma control (Asthma Control Test score > 20) rose from 71.4% to 77.7%. Conversely, the rescue therapy and referral rates to hospital emergency departments for asthma decreased from 15.8% to 12.0% and 0.7% to 0.5%, respectively from 2010 to 2015, despite an increase in total asthma attendances.

CONCLUSION Overall, the asthma control status of patients improved, resulting in lower rescue therapy and referral rates. Nonetheless, more elderly and Malay patients attended the polyclinics for asthma management; further research is required to identify the underlying factors.

CATEGORY: MEDICAL

EHASM2016-POSTER-M17

Community-acquired pressure ulcers in older patients

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INTRODUCTION We aimed to identify the prevalence of community-acquired pressure ulcers (PU) in a cohort of older patients aged ≥ 65 years.

METHODS This is a pooled analysis of prevalence audits that were undertaken in geriatric patients from May to December 2014. Using the Plan-Do-Study-Act cycle for quality improvement, teams were trained in identification, prevention and management of PU. The prevalence audits were undertaken to assess the impact of a care bundle for PU prevention, and data from these audits was pooled and analysed. Patients aged < 65 years were excluded from data analysis.

RESULTS A total of 784 patients ≥ 65 years old had 887 inpatient episodes, and PU were identified in 142 (17.6%) cases, of which 15.9%

were hospital-acquired and 84.1% were community-acquired. Median hospital length of stay (LOS) was significantly longer in the PU group than the non-PU group (13.0, IQR 8.0–22.8, mean 19.5 days vs. 11.0, IQR 6.0–18.0, mean 15.9 days; $p = 0.002$). The 30-day readmission rate was higher in the PU group (24.3% vs. 16.5%; $p = 0.021$). Inpatient mortality was also significantly higher in the PU group (13.2% vs. 2.7%; $p < 0.001$).

CONCLUSION Compared to patients without PU, patients with PU are older and have a longer hospital LOS, a higher likelihood of readmission to hospital and a higher risk of inpatient mortality. The majority of PU is community-acquired, thus further efforts are needed to address prevention in the community setting.

CATEGORY: MEDICAL

EHASM2016-POSTER-M18

Impact of a telehealth programme on patient self-management behaviour and knowledge: a preliminary analysis

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INTRODUCTION This study aimed to examine the impact of a telehealth programme on heart failure (HF) knowledge and self-care behaviours.

METHODS Patients admitted for HF and discharged back home from November 2014 to February 2016 were recruited for a programme comprising nurse-managed telehealth and telemonitoring using phone calls, augmented with an online platform that delivers education content, surveys and remote symptom monitoring. The Self-Care of HF Index (SCFHI) – measuring the maintenance of healthy behaviours, management of symptoms and confidence domains of self-care – and the Dutch HF Knowledge Scale – measuring patient knowledge – were administered by trained interviewers at discharge and the end of telehealth intervention (one-year post-discharge). Paired sample *t*-test and bivariate analysis were performed.

RESULTS Mean age of the 29 patients was 72 ± 10.4 years (52% male). 45% were Chinese, 48% were Malay and 7% were Indian or others

others. The results of the pre-post survey showed that patients' mean self-knowledge levels increased from 9 ± 1.8 to 13 ± 2.1 (conditions $t[\text{degree of freedom: } 28] = 8$, $p \leq 0.01$). As a score ≥ 10 was deemed knowledgeable, the intervention resulted in improvement in patients' self-knowledge. The mean SCFHI maintenance and confidence scores increased from 65 ± 12.7 to 71 ± 9.8 ($t[28] = 2.4$, $p = 0.03$) and from 61 ± 17.7 to 66 ± 12.2 ($t[28] = 1.4$; $p = 0.19$), respectively. The SCFHI management scores could not be compared, as patients did not meet the criterion for scoring (due to breathing problems or ankle swelling in the past month).

CONCLUSION Preliminary results, based on the first 29 patients who completed the 12-month follow-up, suggest that intervention was effective in increasing patient's knowledge and maintenance of healthy behaviours. Further studies will be done to determine the impact of the programme on healthcare utilisation.

CATEGORY: MEDICAL

EHASM2016-POSTER-M19

Review of inpatient rehabilitation transfer back to acute wards

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INTRODUCTION The primary aims were to determine the rate of and reasons for inpatient rehabilitation transfers back to acute wards. Secondary aims included analysing transfers in relation to the day of week, time of day and outcome of the patients.

METHODS A retrospective review of the medical records of all patients who were transferred out of inpatient rehabilitation to acute wards from June 1, 2015 to May 31, 2016 was performed.

RESULTS There were 50 episodes of patient transfers back to acute wards, with a 5% rate of transfer. 74% of the patients were male, and the mean age was 67.8 years. 14% of the patients had end-stage renal failure and 4% had chronic obstructive pulmonary disease. 22% of all transfers involved patients with prior admission to the intensive care unit during the current admission. The indications for transfer were sepsis (18%), desaturation (10%), bleeding gastrointestinal tract (8%)

and neurological deterioration (8%). Although transfers can occur on any day of the week, 62% occurred on Thursday and 10% occurred over the weekend. 56% of transfers occurred during office hours (0800–1659 hours), while 16% occurred between 2000 and 0759 hours. 10% of transfers occurred with three days of admission to inpatient rehabilitation. 44% of patients were eventually transferred back to continue with rehabilitation after resolution of the acute medical issues. Overall, the percentage of patients who were discharged home or to community hospitals and those who died were 34%, 30% and 14%, respectively.

CONCLUSION Transfers back to acute ward in patients undergoing inpatient rehabilitation is an important issue. A case control study will better identify the predisposing factors for such transfers. With an increasingly complex patient population, transfers back to acute ward are unavoidable.

CATEGORY: NURSING

EHASM2016-POSTER-N01

Diabetes Conversation Map: an interactive diabetes mellitus education tool

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INTRODUCTION This study aimed to evaluate the effectiveness of the Diabetes Conversation Map (DCM) and build diabetes mellitus (DM) education capability.

METHODS The DCM is a new learner-driven education tool developed to create DM awareness and educate learners on healthy lifestyle changes. It consists of four tabletop pictorial maps, each measuring 0.91 m × 1.55 m. The teaching technique empowers people with DM to improve their health outcomes through visual-sharing and interactive communication. Focus topic allows participants to participate and navigate throughout the session. The DCM comprises four components: living with DM; how DM works, healthy eating and keeping active; and starting on insulin. Nurse facilitators facilitated the sessions in English and Mandarin from July 2015 to April 2016. Patients and family members from three polyclinics were invited to attend the sessions. Each session, attended by 10–12 patients, lasted two hours. Discussion cards were utilised to encourage patients to explore DM-related health facts, which stimulate learning through peer

discussions. Patients formulate their own action plan for behaviour change and complete the questionnaire surveys at the end of each session.

RESULTS Four sessions were conducted and attended by 43 patients (39 diabetics, 4 non-diabetics). 98% reported that DCM enabled peer interaction and communication, and improved their understanding of DM. 91% of diabetics felt that they were motivated to take action for behaviour change. Non-diabetics found that they were better informed about the conditions after the session. 98% of the participants highly recommended DCM as a learning tool.

CONCLUSION The DCM learning technique stimulated problem-solving skills, and allowed patients to share their unique experiences and ability to handle problems related to their conditions. Thus, DCM strengthened patients' capability in self-management and enhanced caregivers' capacity in providing support and care. It complements existing education programmes and adds value to DM teaching methodology.

CATEGORY: NURSING

EHASM2016-POSTER-N02

Prevalence and management of urinary incontinence in an acute geriatric setting

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INTRODUCTION This clinical audit aimed to establish the prevalence of urinary incontinence and to review interventions carried out pertaining to continence management in an acute geriatric setting.

METHODS A cross-sectional audit was conducted in an acute hospital via a study-specific audit form developed by the authors. The case records of all patients from two geriatric wards were reviewed by one auditor over one month, yielding a total of 44 case records. Data collected was analysed using SPSS.

RESULTS The review of audited patient records showed that 61.2% of patients had urinary incontinence (urine leakage) and 68.0% of patients were on diapers, with a significant 41.2% started on diapers only upon admission. However, the diagnosis of urinary incontinence was poorly documented and only 17.7% of patient records showed

documented plans for continence management. In patients with urinary incontinence, documented assessments relevant to urinary incontinence were: urinalysis (77.7%); post-void residual urine (56.8%); urine culture (34.1%); per rectal examination (22.7%); and abdominal/kidneys, ureters and bladders radiographs (11.4%). Documented interventions carried out were: referral to physiotherapists and occupational therapists (90.0%); clearing of bowels (50.0%); bladder retraining/scheduled toileting (16.7%); urinary catheterisation (6.7%); and referral to specialists (3.3%).

CONCLUSION Urinary incontinence and associated diaper use is not uncommon in the inpatient setting. However, it remains underdiagnosed and undermanaged. As such, there is potential to improve on the assessment and continence management of elderly patients with urinary incontinence in acute settings.

CATEGORY: NURSING

EHASM2016-POSTER-N03

Effect of Advance Care Planning on the care of patients referred to palliative care service in a restructured hospital

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INTRODUCTION We aimed to analyse the effect of Advance Care Planning (ACP) on the care that patients received, especially toward the end of their lives.

METHODS Patients referred to palliative care service were screened for ACP discussion based on existing criteria. Implied consent was obtained. Patients or family members were counselled based on a set of guiding questions to facilitate care decision-making and communication of care wishes or goals to significant others. Data captured from January to December 2015 was analysed retrospectively.

RESULTS In total, 111 patients were suitable for ACP discussion. 79 of them completed the discussion and made their care wishes and goals; 32 patients/relatives did not complete the ACP discussion, as they were

either not ready or the patient had become too ill to complete it. Out of the 79 patients, 67% suffered from terminal cancer. 88% of the 79 patients opted for minimal interventions and comfort care, 3.8% chose full treatment despite a short prognosis and 8.2% were still alive at the time of data analysis. 51% of patients wished to pass on in the comfort of their home, surrounded by loved ones and with their wishes fulfilled. 66% of patients had their final care wishes honoured at the end of life, while the remaining 34% did not fulfil their care wishes due to symptoms burden, difficulty in prognostication and complex care arrangements.

CONCLUSION ACP has a positive impact on patients' care at the end of life. However, it should be integrated as part of patients' routine care at an early stage of their illness.

CATEGORY: NURSING

EHASM2016-POSTER-N04

Ethnic differences in ST-segment elevated myocardial infarct incidence and 30-day case fatality rate in Singapore in 2007–2014

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INTRODUCTION This study aimed to compare the incidence and 30-day case fatality rate of ST-segment elevated myocardial infarct (STEMI) among the different ethnic groups in Singapore, in order to identify the ethnic groups at high risk so that ethnic-specific preventive measures and interventions can be put in place early to reduce incidence and mortality.

METHODS This is a retrospective cohort study consisting of 17,147 consecutive Singapore residents who had STEMI from January 2007 to December 2014 and were registered in the Singapore Myocardial Infarct Registry. Incidence and 30-day case fatality rates were computed and stratified by ethnic groups. Characteristics of STEMI patients were compared across ethnic groups using chi-square test for categorical variables and Kruskal-Wallis rank test for numeric variables.

RESULTS The incidence rates of STEMI for Malay and Indian patients were higher than that for Chinese patients. Chinese and Malay patients had higher 30-day case fatality rates than their Indian counterparts. These ethnic disparities persisted over time. Among the three ethnic groups, Malays had the highest proportion of smokers ($p < 0.001$) and obese patients ($p < 0.001$), and the longest median symptom-to-balloon time ($p = 0.067$). Indians had the highest proportion of patients with diabetes mellitus ($p < 0.001$) and hyperlipidaemia ($p < 0.001$). Chinese patients had the greatest median age at STEMI onset ($p < 0.001$).

CONCLUSION Our findings showed that it is important to strengthen prevention and intervention among certain ethnic groups.

CATEGORY: NURSING

EHASM2016-POSTER-N05

Going beyond acute care for patients with inflammatory bowel disease via a helpline service

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INTRODUCTION The study explored the provision of a point-of-contact and value-added helpline service for patients who were seen at Changi General Hospital's inflammatory bowel disease (IBD) clinic.

METHODS A prospective study was conducted for all patients who had utilised the helpline service from June 22, 2015 to June 21, 2016.

RESULTS A total of 52 calls were made to the helpline by 18 patients. 10 (56.0%) patients had ulcerative colitis and 8 (44.0%) had Crohn's disease. The patients were mainly Chinese and aged 16–56 years. Of the 52 calls made, 22 (42.3%) were to change or confirm their appointments; 9 (17.3%) were related to self-management of their conditions; 8 (15.4%) were regarding management of symptom flares for which urgent outpatient appointments were made to assess their

condition (early review at the IBD clinic helped to reduce unnecessary hospital admissions); 7 (13.5%) were administrative issues (e.g. request for memos or laboratory results); 4 (7.7%) were concerning non-IBD related symptoms (e.g. lumps), for which appropriate referrals were made and post-referral calls conducted; and 2 (3.8%) were for refill of medications due to either misplacement of medicines or miscalculation of leftover medication stock.

CONCLUSION The results underscored the paramount importance of a point-of-contact and the added value of a helpline service for patients with IBD. Most patients found the service helpful as a source of information and an early access to specialist consultation and treatment.

CATEGORY: NURSING

EHASM2016-POSTER-N06

Validation of the Mandarin version of the Hypertension Self-Care Profile instrument using web-based approach

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INTRODUCTION Patients with essential hypertension have to self-manage their medical condition most of the time. Their self-efficacy capacity influences their self-management, which can be assessed using tools. The Hypertension Self-Care Profile (HTN-SCP) questionnaire assesses self-efficacy in three domains: behaviour; motivation; and self-efficacy. This study aimed to validate the Mandarin version of the HTN-SCP questionnaire (HTN-SCP-Mandarin) targeted at patients with hypertension.

METHODS Chinese patients aged ≥ 40 years with essential hypertension were recruited from a primary care clinic. The investigators guided the patients in filling out the web-based, 60-item HTN-SCP-Mandarin using a tablet or smartphone at the first visit and again at the two-week follow-up (test-retest). Internal consistency and test-retest reliability were evaluated using Cronbach's alpha and intraclass correlation coefficients (ICC), respectively. Student's *t*-test was used to

determine the relationship between the patients' overall HTN-SCP-Mandarin scores and their self-reported self-management activities.

RESULTS Of the 153 patients who completed the questionnaire during the initial test, 79 responded to the test-retest. Cronbach's alpha coefficients were 0.838, 0.929, and 0.927 for the behaviour, motivation and self-efficacy domains, respectively, indicating high internal consistency. The item-total correlation was 0.058–0.677 for behaviour, 0.374–0.798 for motivation and 0.326–0.767 for self-efficacy. The corresponding ICC scores of 0.643, 0.579, and 0.710 for the three domains showed fair-to-good test-retest reliability.

CONCLUSION The results showed face validity of the HTN-SCP-Mandarin questionnaire, which potentially can be used to assess self-efficacy among patients with hypertension who are proficient in Mandarin. Further study is needed to correlate its scores with actual demonstration of self-efficacy by patients.

CATEGORY: NURSING

EHASM2016-POSTER-N07

A compliance study on the management of patients with chronic obstructive pulmonary disease according to obstructive lung disease guidelines

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INTRODUCTION This study evaluated compliance in the management of patients with chronic obstructive pulmonary disease (COPD) according to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines in an acute care hospital.

METHODS This was a prospective study of all patients admitted with exacerbations of COPD from 1 July 2014 to 30 July 2015. Data collected included smoking history, COPD Assessment Test (CAT) score, patient education, comorbidities and pulmonary rehabilitation. Data was compared against the GOLD guidelines.

RESULTS Of the 349 patients enrolled, 99% (n = 345) were male. 63% (n = 221) were Chinese, 30% (n = 105) Malay, 4% (n = 13) Indian and 3% (n = 10) of other ethnicities. GOLD guidelines recommend cessation of smoking, as it has the greatest capacity to influence the natural history of COPD (level A evidence); all our patients were counselled to quit smoking. All patients received intensive COPD education in compliance with GOLD guidelines, which advised that

health education be included to help COPD patients improve their health status and ability to cope with the disease. As comorbidities often coexist with COPD and impact prognosis, GOLD guidelines recommend that COPD patients be screened and treated for comorbidities; this was implemented in 100% of patients. All our patients were also screened for participation in a pulmonary rehabilitation programme in line with GOLD recommendation that COPD patients engage in exercise training programmes to improve tolerance and symptoms of dyspnoea/fatigue (level A evidence). Based on GOLD recommendation that CAT is a reliable measure of the impact of COPD on patients' health status, 316 (91%) of eligible patients were assessed using CAT.

CONCLUSION Our existing hospital management of patients with COPD is in line with current evidence-based guidelines and provides better care of patients by empowering them to have better self-management during disease exacerbation.

CATEGORY: NURSING

EHASM2016-POSTER-N08

Strategies to improve recruitment for the outpatient Cardiac Rehabilitation Programme: an evaluation and outcome study

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INTRODUCTION We aimed to evaluate effectiveness of strategies to: (a) improve the recruitment rate for the outpatient Phase II Cardiac Rehabilitation Programme (CRP); and (b) review readmission and mortality rates among CRP participants and non-participants following acute myocardial infarction (AMI).

METHODS This was a prospective study of all patients admitted to the Cardiology Department for AMI from January 2014 to March 2016. Eligible candidates were enrolled into the outpatient Phase II CRP. Since January 2014, various strategies have been implemented to address the top five reasons for declining CRP participation: more affordable subsidy for outpatient CRP to assist patients with financial concerns; standardised education on benefits of CRP by healthcare professionals to motivate patients who preferred self-exercise; post-discharge follow-up calls to emphasise the need for CRP to patients who could not make a decision in the inpatient setting; and increased number of

exercise sessions at different timings to accommodate patients who reported unsuitable timeslots and work commitment.

RESULTS Of the 2,029 patients admitted for AMI, 524 qualified for CRP. 287 (54.8%) patients were Chinese, 122 (23.3%) Malay, 65 (12.4%) Indian and 50 (9.5%) of other races. Strategies implemented effectively improved outpatient CRP recruitment rate from 5.4% (pre-intervention in 2013) to 28.3% (post-intervention in 2016). No statistically significant difference was noted in the three-month readmission and mortality rates for both groups.

CONCLUSION This study demonstrated that targeted strategies resulted in increased outpatient Phase II CRP recruitment rate and short-term CRP participation was not associated with significant reduction in readmissions for post-AMI patients. A longer term study is needed to measure if outpatient CRP participation affects six- and 12-month readmission and mortality rates.

CATEGORY: NURSING

EHASM2016-POSTER-N09

Is the Modified Rankin Scale a predictor for stroke readmission?

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INTRODUCTION This study determined the relationship between the Modified Rankin Scale (MRS) and 30-day readmission rates in patients with ischaemic stroke.

METHODS In this retrospective study of 996 ischaemic stroke patients admitted from January to December 2015, 72 patients were readmitted within 30 days after hospitalisation. Chi-square test was used to compare the frequency of 30-day readmissions in patients with MRS scores ≥ 3 vs. those with MRS scores < 3 . Data obtained from medical records was analysed using SPSS version 19.

RESULTS Of the 996 ischaemic stroke patients, 35 (3.5%) died during the index admission. Of the remaining patients, 72 (7.5%) were readmitted within 30 days. Of these, 23.6% of patients were readmitted for neurological-related conditions: ischaemic stroke (18.0%); seizure (2.8%); haemorrhagic stroke (1.4%); and vascular dementia (1.4%). The

remaining 76.4% were readmitted for non-neurological conditions, of which the top five conditions were: pneumonia (18.0%); urinary tract infection (8.3%); sepsis (5.6%); falls (5.6%); and lower gastrointestinal tract bleeding (5.6%). Patients with MRS scores ≥ 3 were found to be at a significantly higher risk of readmission compared to those with MRS scores < 3 (11.3% vs. 2.9%). 44 out of the 72 patients (61.1%) who were readmitted after ischaemic stroke were discharged home, while 8 (11.1%) were institutionalised and 6 (8.3%) died.

CONCLUSION The study revealed that patients with high MRS score during the index admission had a higher risk of 30-day readmission, with infection being the main reason for readmission. Prevention of post-stroke complications and early, frequent follow-up in stroke patients discharged with high MRS scores are imperative in preventing readmission.

CATEGORY: NURSING

EHASM2016-POSTER-N10

An initial evaluation on the implementation processes of the Palliative Care Outcomes Collaboration patient assessment tool for the inpatient palliative care consultative service at Changi General Hospital

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INTRODUCTION This study aimed to evaluate the implementation process of the Palliative Care Outcome Collaboration (PCOC) patient assessment tool for the inpatient palliative care consultative service at Changi General Hospital.

METHODS We collected and reviewed PCOC data that was used to reflect symptom intervention and outcomes of care from October 1, 2015 to June 30, 2016. Implementation processes were examined to discuss the issues and challenges faced during implementation. Strategies and resources were then proposed to improve the PCOC implementation processes.

RESULTS The challenges of implementing the PCOC tool included resistance to changes in current workflow and processes, as well as inconsistencies in the recorded data, which made data collection a tedious and time-consuming process. The PCOC forms were completed manually

followed by data entry. To yield meaningful data for analysis for clinical improvement, interpretation of data was tedious. For proper utilisation of the PCOC tool, several educational sessions were conducted to reinforce to the team the importance of appropriate assessment, compliance and completion of data entry. The review showed an emergent need to incorporate PCOC into a hospital-wide information technology system and to integrate the data to indicate clinical outcomes.

CONCLUSION The PCOC assessment tool provides trigger points in the change of phase and severity of symptoms, which prompts clinicians to initiate appropriate treatment. The documented data of outcome measures were utilised during multi-disciplinary/mortality meetings to address issues, discuss strategies for improvement and highlight areas that required follow-up. As such, the PCOC assessment tool has a clinical impact on the management of the patients.

CATEGORY: NURSING

EHASM2016-POSTER-N11

Developing person-centred care for older persons with dementia in the acute hospital

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INTRODUCTION We aimed to evaluate the outcomes of a three-pronged strategy to develop person-centred care in a dementia-specific ward of an acute hospital, by studying: (a) patients' clinical and functional outcomes during hospitalisation; and (b) patients' family and caregivers' subjective perceptions of the care staff, environment and processes.

METHODS The three-pronged strategy comprised the development of: (1) a person-centred care process through assessment of the individualism of the patient and incorporating structured activities into care routine; (2) a person-centred environment, which is home-like and therapeutic; and (3) person-centred staff through education and bedside learning. 80 patients with dementia admitted to the unit from November 2015 to February 2016 were included in the study. Patients' clinical and functional outcomes were derived retrospectively from their clinical record. 62 patients' family and caregivers provided their perception based on a survey questionnaire.

RESULTS 53 (66%) patients exhibited challenging behavioural and psychological symptoms of dementia; none was instituted with physical restraint. With non-pharmacological interventions based on person-centred care assessment, the use of chemical restraint was reduced, discontinued or prevented in 14 (26%) patients. Hospital-associated functional decline was prevented in the majority (n = 78, 98%) of patients through nurse-led activities conducted away from bedside. The prevalence of fall was low (n = 2, 3%). 64 (80%) patients returned home; of these, five were initially planned for nursing home placement. 90% of the 62 caregivers perceived that the nursing staff possessed good knowledge and skills in dementia care, and a willingness to make an extra effort to value patients' individual preference. 96% perceived that their loved ones received safe and quality care.

CONCLUSION The development and promotion of person-centred care has resulted in encouraging clinical patient outcomes and positive family and caregivers' perception on the care received by older patients with dementia.

CATEGORY: NURSING

EHASM2016-POSTER-N12

Functional assessment of hip fracture patients after surgery in a single centre: a comparative study

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INTRODUCTION This study compared hip fracture patients' functional mobility status before surgery and six months after surgery.

METHODS This was a prospective study of patients aged ≥ 65 years with low energy-impact hip fractures who were operated between December 1, 2014 and November 30, 2016 at Changi General Hospital. The Parker Mobility Score was used to assess patients' functional mobility status at admission, and at the third- and sixth-month post-discharge outpatient consultations.

RESULTS A total of 122 patients were recruited. The majority (n = 88, 72.1%) were female. 91 (74.6%) patients were Chinese, 18 (14.8%) Malay, 4 (3.3%) Indian and 9 (7.4%) were of other ethnicities. Mean age of patients was 79.6 ± 6.99 (66–96) years. Mean pre-fracture Parker

Mobility Score was 6.35 ± 2.76 . A significant difference in the score was noted at three and six months postoperatively (3.18 ± 2.31 vs. 4.25 ± 2.74 ; $p < 0.05$). At the six-month follow-up, only 57 (46.7%) patients were mobile-dependent and 65 (53.3%) were mobile-independent to pre-fracture status (Parker Mobility Score > 6). Of the 55 (45.1%) patients who had a pre-fracture Parker Mobility Score of 9, only 7 (5.7%) patients had a score of 9 at the three-month consultation, as compared to 16 (13.1%) at the six-month consultation.

CONCLUSION As only half of the hip fracture patients gained independence in mobility at six months after operation, further strategies to expedite this independence to pre-fracture status would be beneficial.

CATEGORY: NURSING

EHASM2016-POSTER-N13

Is tube thoracostomy necessary for traumatic occult pneumothorax? A six-year review

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INTRODUCTION Occult pneumothorax is defined as pneumothorax seen on computed tomography (CT) but not seen on supine chest X-ray (CXR). Although many studies have shown that occult pneumothorax can be managed conservatively with good outcome, it remains controversial. We hypothesised that chest tube insertion is necessary for occult pneumothorax cases in the hospital setting.

METHODS We retrospectively reviewed all blunt chest trauma cases that were admitted to Changi General Hospital over six years (2008–2013). The inclusion criterion was patients whose initial CXR revealed no pneumothorax but subsequent CT demonstrated otherwise. Data collected included mechanism of injuries, injuries sustained, types of CT, size of pneumothorax, indication for chest tube insertion, injury severity score, age, gender, admission time and date of emergency department admission. Cases in which pneumothorax was

seen on CXR, chest tube was inserted prior to CXR or pneumothorax was shown on CT without an initial CXR performed were excluded from the study.

RESULTS A total of 235 trauma patients aged 9–86 years were reviewed. 181 (77%) of patients were male and 54 (23%) female. Approximately 70% of occult pneumothorax cases did not require chest tube insertion and no complication was indicated. About 30% of cases required chest tube insertion due to poor oxygen saturation, haemodynamic instability, and prophylactic insertion for positive ventilation and general anaesthesia purposes.

CONCLUSION Our results showed that chest tube insertion for occult pneumothorax is not necessary. However, it remains controversial whether chest tube insertion is required for certain groups of trauma patients.

CATEGORY: NURSING

EHASM2016-POSTER-N14

Transitional Living Unit in Singapore: a novel and remarkable initiative

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INTRODUCTION The primary aims of the study were to describe our experience in establishing the Transitional Living Unit (TLU) and to examine the experiences of the patients discharged from the TLU.

METHODS This was a descriptive study that documented our experience in setting up the TLU and included a patient satisfaction survey that was administered on the day of discharge from the TLU. The survey was typically self-administered and the nursing staff helped with translation, when necessary.

RESULTS Selected patients were transferred to the TLU. Inclusion criteria were: medical and psychological stability; Functional Independent Measurement scores ≥ 5 in all domains; and recommendations made by the multidisciplinary rehabilitation team with clear functional goals identified. Exclusion criteria were: a history of substance or alcohol abuse; under respiratory/droplets precautions; indication for

discharge to nursing home; and decline of transfer to the TLU. Activities planned were based on the goals and needs of individual patients and their caregivers. The multidisciplinary rehabilitation team monitored and assessed patients' activities of daily living (ADL) every day. A total of 44 patients stayed overnight in the TLU, and the ADL of 84 patients was assessed by therapists and nurses from January 7, 2015 to July 29, 2016. Almost all the patients agreed that they had gained confidence in staying alone and 74% agreed that they had achieved their goals. 90% of the patients were extremely satisfied with the TLU initiative, with none indicating any dissatisfaction. Almost all the patients agreed that they would recommend the TLU to other patients.

CONCLUSION Our experience in establishing the TLU has been positive. We are certain that the TLU can be extended to patients from other disciplines in the future.

CATEGORY: NURSING

EHASM2016-POSTER-N15

A pilot study to evaluate the effectiveness of advanced practice nurse-led in-service talks in a general surgical ward of a restructured hospital

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INTRODUCTION This pilot study aimed to evaluate nurses' perceived benefits of advanced practice nurse (APN)-led in-service talks in a general surgical ward.

METHODS This was a non-experimental descriptive study. APN-led in-service talks were conducted for 30 minutes fortnightly in the ward from August 2015 to July 2016. The talks included various surgical topics with case scenarios. A structured questionnaire was developed, containing ten 5-point Likert scale-rating questions and two open-ended questions. A purposeful sampling was adopted and the ward nurses were surveyed in mid-July 2016. The data return rate was 92%.

RESULTS 97% of nurses felt that the talks had increased their awareness of evidence-based practice and understanding of patients' medical management and potential postoperative complications. 94%

of nurses felt that their pharmacology knowledge and clinical reasoning for institutional guidelines had improved. Nurses also realised that basic nursing interventions are essential for physicians' decision-making concerning patient medical management. All nurses agreed that the talks enriched their medical knowledge, and that they were more confident in carrying out patients' care plans and providing patient and family education. All nurses commented that the talks provided them with advanced medical and nursing information, as well as an opportunity to refresh their skills and knowledge. They suggested that APN-led in-service talks should be continued and future talks could be conducted by ward nurses under the guidance of an APN, to foster a culture of lifelong learning.

CONCLUSION APN-led in-service talks were perceived as beneficial in enriching ward nurses' clinical knowledge and skills.

CATEGORY: NURSING

EHASM2016-POSTER-N16

Occupational stress and burnout in registered nurses

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INTRODUCTION This systematic review aimed to determine the main contributing factors of burnout among registered nurses in Singapore.

METHODS Electronic databases were searched. Records were limited to those that have been peer-reviewed and published between 2006 and 2016. 12 studies that met the inclusion criteria were included.

RESULTS Job stressors was the first contributing factor. One study found that increased workload or work intensity is a major stressor among nurses, as it affects their satisfaction level. The same study also attributed burnout to increase in patient acuity, where health issues and patient's medical needs are more complex and challenging. Limited support from nursing management and lack of communication among colleagues were also identified as perceived stressors. Coping strategies was the second contributing factor. Negative coping strategies (e.g. smoking and drinking) were proven to increase the level of burnout, while active coping could temper the effects of stress. Several studies

concluded that active coping strategies lower the chances of emotional exhaustion and are negatively associated with cynicism. Personality was the third contributing factor. Several qualitative research have found that nurses with Type D personalities are at risk of burnout, as they have high levels of negative affectivity and social inhibition, which can result in anxiety, depression or irritability, preventing them from interacting well with others.

CONCLUSION Increased workload, work intensity and patient acuity, as well as poor managerial and resource support, are factors that could result in burnout. Such negative impact on nurses' well-being jeopardises quality of care, compromising patients' safety. To mitigate the high stressors faced by nurses, education on coping strategies and a staff support system should be considered. Further research on strategies to overcome stressors such as high patient acuity and poor managerial support is required.

CATEGORY: NURSING

EHASM2016-POSTER-N17

Early and safe discharge of oesophagogastrroduodenoscopy patients from an endoscopy centre

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INTRODUCTION We aim to relieve bed crunch, increase patient's satisfaction and enhance hospital's image.

METHODS A pilot study involving 200 patients was conducted. Patients who fulfilled the following criteria were recruited: (a) age 21–60 years; (b) admitted for diagnostic gastroscopy; and (c) presented without pre-existing physical and mental conditions. Patient parameters were evaluated using a post-sedation assessment that ensured stability prior to discharge.

RESULTS Most of the 200 patients recruited in this study were in their 40s, and there were equal proportions of male and female patients.

The most common diagnosis was gastritis. All the patients fulfilled the postprocedure discharge criteria within 1–1.5 hours of oesophagogastrroduodenoscopy under sedation and were discharged home with an adult accompanied. A follow-up call to patients 1–2 hours after discharge confirmed that there were no adverse events associated with an expedited discharge. These results validated the feasibility of expedited discharges and achieved the aims of the improvement project team.

CONCLUSION Based on the results of the study, the objectives of the study were met.

Acknowledgements

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Judges

Allied Health Oral Paper and Poster Awards	
Ms Goh Chin Chin	Pharmacy Manager, SingHealth Polyclinics – Tampines
Dr Lee Geok Ling	Executive Editor, Asia Pacific Journal of Social Work and Development Assistant Professor, Social Work, Faculty of Arts and Social Sciences, NUS
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Ms Namrata Sadarangani	Head, Community Therapy Services, SACH
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Dr Lim Su-Fee	Advanced Practice Nurse, Nursing Division, SGH
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Dr Tan Khoon Kiat	Senior Lecturer, School of Health Sciences (Nursing), Nanyang Polytechnic

Emcee

Ms Yvonne Chan, Executive, Care and Health Integration, Changi General Hospital

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