

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Allied Health)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-AH-01	Endocrinology	Allied Health
<p>Authors S.MOHAMMED ADNAN¹, B.PANDIAN¹, X.L.TAN¹, J.KHOO¹, S.LOW¹, A.MOH¹, S.C.LIM¹</p> <p>¹Khoo Teck Puat Hospital (Singapore)</p> <p>Title Association between type 2 diabetes mellitus and neurofilament light chains in middle-aged and older individuals</p> <p>Background & Hypothesis Neurofilament light chain (NfL) is a biomarker of neuroaxonal injury and cognitive impairment. There is a paucity of studies on the association between type 2 diabetes mellitus (T2DM), which may confer higher risk for cognitive impairment, and NfL. We investigated if T2DM was associated with higher NfL levels.</p> <p>Methods We conducted a cross-sectional study on 100 participants aged ≥ 40 years. NfL was measured with enzyme-linked immunosorbent assay. T2DM was self-reported or determined from fasting plasma glucose (FPG) ≥ 7.0 mmol/l. Linear regression was used to examine association between diabetes status and NfL, adjusting for demographics, clinical covariates and physical activity</p> <p>Results The mean age was 56.7 ± 10.2 years. The proportion of DM was 28.0%. FPG was positively correlated with NfL (correlation coefficient=0.31; $p=0.005$). DM was positively associated with NfL with coefficient 1.30 (95%CI 0.44-2.16; $p=0.003$) in unadjusted analysis. The association persisted in the fully adjusted model with coefficient 1.15 (95%CI 0.16-2.13; $p=0.023$). Sub-group analysis showed that the association was more pronounced in those with lower body mass index (BMI) < 23.5 kg/m² with adjusted coefficient 1.93 (95%CI 0.55-3.39; $p=0.007$).</p> <p>Discussion & Conclusion DM was associated with higher NfL. The association was more marked in those with lower BMI. The findings suggest that NfL may serve as a potential monitoring and therapeutic target in prevention of cognitive impairment in patients with T2DM.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
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Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-AH-02	Podiatry	Allied Health
<p>Authors C.G.NG¹, T.H.J.WONG¹, S.W.L.HO¹, K.ANUAR¹, M.F.M.FARHAN¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p>		
<p>Title Specifically Optimized Prefabricated Insoles (SOPI) for managing mechanical foot pains in the subtle cavus foot: The SOPI trial</p>		
<p>Background & Hypothesis The Subtle Cavus Foot (SCF) – clinically characterized by the “peek-a-boo” sign and a positive Coleman block-test – is commonly associated with patients suffering from Mechanical Foot Pains (MFP). There is no consensus on whether Specifically Optimized Prefabricated Insoles (SOPI) or Plain Prefabricated Insoles (PPI) is more effective clinically. We aimed to compare the effectiveness of SOPI versus PPI in managing SCF patients experiencing MFP.</p>		
<p>Methods A randomized controlled-trial was performed: 29 patients with clinically diagnosed SCF and MFP were prospectively recruited and randomly assigned to receive either SOPI or PPI. Excluding 3 drop-outs, 13 patients completed the study in each group. The primary outcome measure was the Foot Function Index (FFI) total and subscale-scores. Student t-test was used to analyse for differences between groups at 3-months post-intervention.</p>		
<p>Results Pre-intervention, FFI total and subscale scores did not differ significantly between groups. However, at the 3-months treatment end-point, SOPI demonstrated superior clinical outcomes that were statistically significant compared to PPI, with lower mean FFI-total scores (SOPI: 5.6±5.0, PPI: 17.8±10.9, P=0.002, 95%CI: 5.2–19.3), FFI-pain subscale-scores (SOPI: 9.4±8.0, PPI: 24.4±13.5, P=0.003, 95%CI: 5.9–24.1), FFI-disability subscale-scores (SOPI: 4.4±5.6, PPI: 17.9±13.0, P=0.003, 95%CI: 5.2–21.8) and FFI-activity subscale-scores (SOPI: 0.6±1.5, PPI: 5.5±7.2, P=0.03, 95%CI: 0.5–9.3).</p>		
<p>Discussion & Conclusion SOPI are more effective than PPI in managing MFP in patients with clinically identified SCF. Considering SOPI’s affordability, accessibility, and ease of replication in-office, we recommend the use of SOPI for SCF patients presenting with MFP. Future studies can explore SOPI’s value in preventative care.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
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Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-AH-03	Endocrinology	Allied Health
<p>Authors V.V.SEOW², B.K.LIM², D.YONG², A.MOH², S.LOW², T.Y.LEE¹, M.MAHAD², Y.M.LUAH¹, J.HAN², B.LAM², T.SUBRAMANIAM¹, C.F.SUM¹, S.C.LIM²</p> <p>¹Admiralty Medical Centre (Singapore), ²Khoo Teck Puat Hospital (Singapore),</p>		
<p>Title Effects of intensive calorie restriction-based weight management on body composition parameters in obese adults with type 2 diabetes</p>		
<p>Background & Hypothesis The United Kingdom Diabetes Remission Clinical Trial's weight management programme effectively induces weight loss and type 2 diabetes (T2D) remission, but the impact on body composition is not well-characterized. With the implementation of this programme at Yishun Health, we assessed the body composition changes that accompanied weight loss among multi-ethnic Asians.</p>		
<p>Methods T2D adults with body mass index (BMI) 27-45 kg/m² and recently-diagnosed T2D (≤6-year duration) were recruited from July 2022. This ongoing programme is tri-phasic: total diet replacement (TDR), food reintroduction (FR), and weight maintenance. Body composition was estimated by bioimpedance. Diabetes remission was defined as HbA1c<6.5%, fasting plasma glucose<7 mmol/L without glucose-lowering medications.</p>		
<p>Results Sixteen participants were recruited (age:34±7 years, 68.8% men, BMI:35.1±4.2 kg/m²). After a 3-month TDR when nadir body weight was achieved (mean baseline 103.2±20.6 to 94.0±18.1 kg, P=0.003), body fat mass decreased from 40.6±9.6 to 35.4±9.1 kg (P=0.021), and was relatively unchanged (35.8±10.0 kg) despite a weight regain to 98.4±21.6 kg following FR. Strikingly, TDR substantially reduced visceral fat area by ~14% (from baseline 189±39 to 163±44 cm², P=0.005) and remained stable post-FR (162±46 cm²). Comparatively, skeletal muscle mass loss was less pronounced, falling from 40.1±4.7 to 37.2±5.5 kg (P=0.041) upon TDR completion, and then rising modestly to 37.8±5.7 kg after FR. Significant reductions in the body composition parameters were observed only in T2D remitters (all P<0.05).</p>		
<p>Discussion & Conclusion The programme markedly improved adiposity parameters especially visceral fat that may contribute to beneficial metabolic outcomes.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
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Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-AH-04	Haematology	Allied Health
<p>Authors Y.L.TAN¹, B.Y.SIA¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p> <p>Title Genotypes of CYP3A5 and CEP72 and their association with neuropathy in Asian patients with lymphoma treated with vincristine-based therapy</p> <p>Background & Hypothesis Paediatric studies have reported an association with CYP3A5 and CEP72 polymorphism with increased risk of vincristine neuropathy. However, this association and its significance have not been established in the adult lymphoma patients. This study was conducted to determine if patients who are CYP3A5 non-expressers (*3/*3) or who carries high risk CEP72 promoter genotype (TT allele at rs924607) would have a higher risk of developing vincristine induced peripheral neuropathy.</p> <p>Methods Patients with aggressive B/ T cell lymphoma who were treated with vincristine containing protocol were recruited. A reviewer abstracted evidence of vincristine induced neuropathy from the electronic clinical notes. Mutation analysis was performed by direct sequencing.</p> <p>Results A total of 66 patients (Median age 67 years old) were included for analysis. We found that 80% of the CYP3A5 non-expressers versus 61% of CYP3A5 expressers (RR 1.3; 95% CI 0.96-1.80; p=0.17) experienced vincristine-induced neuropathy with a significantly greater proportion of patients requiring dose reduction/ treatment disruption (RR 2.1; 95% CI 1.11-4.12; p = 0.02). For CEP72 polymorphism, we found no statistically significant difference in vincristine-induced neuropathy between CEP72 TT and CT/CC patients.</p> <p>Discussion & Conclusion In conclusion, the CYP3A5 non-expressers may experience a greater burden in terms of developing vincristine induced peripheral neuropathy requiring dose reduction/ treatment interruption. However, further studies with larger sample size and longer follow up is required to establish impact on long term outcomes.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Allied Health)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-AH-05	Rehabilitation Medicine	Allied Health
<p>Authors L.WELLER¹, S.SHERWOOD¹, S.H.NG¹, M.VELLAICHAMY¹, A.NOORDIN¹, L.Y.TAN¹, Z.M.NG¹</p> <p>¹KK Women's & Children's Hospital (Singapore)</p> <p>Title The impact of the exopulse Mollisuit® on functional ability in children with cerebral palsy in Singapore</p> <p>Background & Hypothesis Spasticity is a common problem in cerebral palsy (CP) that can impact function and affect quality of life (QoL). The Mollisuit® (a suit with embedded electrodes) is designed to reduce spasticity through electrical stimulation of the antagonistic muscles. We aim to evaluate the suit's effect on functional ability.</p> <p>Methods Recruitment was from January 2021 to January 2022. Individuals aged 4-18 years with CP (GMFCS level I to III) were included. Participants wore the Mollisuit® for 60 minutes a day for 4 weeks. Outcome measures included the Gross Motor Function Measure-88 (GMFM-88), EQ-5D questionnaire, Goal Attainment Scale (GAS) and Tardieu scores done at pre-, immediately post- and one-month post intervention.</p> <p>Results Twenty children, median age 7.0 years old (range 4-16) were recruited. One child with autistic spectrum disorder dropped out. Descriptive analysis and paired T tests were performed. Only GMFM Domain C (crawling and kneeling) scores improved significantly from 88.47±SD11.42 to 91.73±SD19.54 (95% CI 0.44-6.07, p=0.026). EQ-5D usual activity (child-reported) was also significant (p=0.040). Results were no longer significant at one month post-intervention. A total of 75% of GAS goals were met immediately post- and 82.50% at one month post-intervention. Only the right hamstring muscle had a significant reduction in spasticity (p=0.03). Nil major adverse event was reported.</p> <p>Discussion & Conclusion Mollisuit® is a safe adjunct therapy that can be used at home. Further studies are required to review dosage and if a longer intervention period concurrent with an active strengthening programme could improve outcomes.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Basic Science / Translational Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-BSTR-01	Renal Medicine	Basic Science / Translational Research
<p>Authors A.MOH², S.LOW², S.PEK², K.ANG², W.E.TANG³, Z.LIM³, S.TAVINTHARAN¹, C.F.SUM¹, S.C.LIM²</p> <p>¹Admiralty Medical Centre (Singapore), ²Khoo Teck Puat Hospital (Singapore), ³NHG Polyclinics (Singapore)</p>		
<p>Title The new dysfunctional adiposity index (DAI) as a predictor of progressive kidney impairment in type 2 diabetes – A 6-year longitudinal analysis</p>		
<p>Background & Hypothesis The new dysfunctional adiposity index (DAI) is an early marker of adipocyte morpho-functional abnormalities. Increased pigment epithelium-derived factor (PEDF) secretion by adipocytes contributes to obesity-induced insulin resistance and inflammation. This novel longitudinal study investigated the predictive ability of baseline DAI for kidney disease progression in multi-ethnic Asians with type 2 diabetes (T2D), and the mediation effect of PEDF in the relationship.</p>		
<p>Methods T2D adults (N=2,057, age:57±11 years, 51.6% men) were prospectively followed for a mean 6.1±1.6 years. DAI was calculated using sex-specific formula constituting waist circumference, body mass index, triglycerides, and high-density lipoprotein-cholesterol. Baseline PEDF levels were quantified using immunoassay. The longitudinal outcomes included a ≥40% decline in the estimated glomerular filtration rate from baseline (eGFR decline) and an increase in the albuminuria category at follow-up (albuminuria progression).</p>		
<p>Results Baseline DAI was associated with kidney parameters cross-sectionally. Additionally, DAI predicted eGFR decline (32% prevalence) over time in the unadjusted Cox regression model (hazard ratio=1.05, 95% CI=1.02–1.09, P=0.002), and after adjustment for demographics, metabolic and kidney variables, and medications (hazard ratio=1.07, 95% CI=1.02–1.14, P=0.008). Similarly, DAI was associated with albuminuria progression (38% prevalence) in the multivariable Cox model (hazard ratio=1.10, 95% CI=1.02–1.19, P=0.017). The relationships between DAI and outcomes were attenuated following further adjustment for PEDF, which emerged as an independent determinant. Binary mediation showed that PEDF explained 61.7% and 33.3% of the indirect effects of DAI on eGFR decline and albuminuria progression, respectively.</p>		
<p>Discussion & Conclusion Elevated DAI increases the risk for progressive kidney impairment, potentially driven by adipose tissue insulin resistance and inflammation.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Basic Science / Translational Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-BSTR-02	Endocrinology	Basic Science / Translational Research

Authors

S.PEK³, JKM HOE¹, S. DISSANAYAKE³, ATIQA³, MADHUU³, TSJ. CHUA⁵, ES TAI⁶, FN ASHNA⁶, ETS LIM⁵, YS TIONG⁷, FKP YAP⁴, RF. VASANWALA⁴, WJ LOH², NSY.KOH⁵, MWJ.CHUA⁸, HC TAN⁹

¹Admiralty Medical Centre (Singapore), ²Changi General Hospital (Singapore), ³Khoo Teck Puat Hospital (Singapore), ⁴KK Women's and Children's Hospital (Singapore), ⁵National Heart Centre (Singapore), ⁶National University Hospital (Singapore), ⁷Ng Teng Fong General Hospital (Singapore), ⁸Sengkang General Hospital (Singapore), ⁹Singapore General Hospital (Singapore)

Title

Treatment outcomes in patients with Familial Hypercholesterolemia in FHCARE: A Multi-site collaboration

Background & Hypothesis

Familial hypercholesterolemia(FH) is an autosomal dominant genetic disease characterized by high plasma low-density lipoproteins cholesterol(LDL-C), increasing risk for premature cardiovascular disease(CVD). Pathogenic and likely pathogenic variants LDLR, APO, PCSK9, are causative for FH. We aim to decipher the treatment outcomes in local patients with FH.

Methods

Probands were recruited from public acute hospitals and medical centers, referred with a clinical diagnosis of FH. We classified "possible" and "definite" FH, based on Simon-Broome Criteria. Baseline and follow-up lipid, mediation data were collected. Genes including LDLR, APOB, PCSK9 were sequenced. Data was analysed(SPSS).

Results

Of 1093 clinical FH probands, age:39.8(29.5–52.8)years, 63.6%males, 73.8%Chinese, 14.8%Malays, 7.1%Indians, 326 (29.8%) had heterozygous variants in FH-causing genes:90.6%(LDLR),8.3%(APOB),0.75%(PCSK9).

Comparing heterozygous LDLRvsAPOB vsNo variants: those with LDLR variants were younger($p<0.05$), had higher total-cholesterols(TC)(mmol/l):(8.43±1.89)vs(7.47±1.53)vs(7.05±1.41) and LDL-C(mmol/l):(6.70±1.87)vs(5.45±1.28)vs(5.65±1.21),both $p<0.0001$. Higher proportion of those with LDLRvsAPOBvsNo variants were on high intensity statins, $p=0.001$, higher proportion of patients with LDLR and APOB variants were on ezetimibe, $p<0.0001$.

No significant difference in TC and LDL-C, between 3 groups, after 12-month treatment:TC, $p=0.457$, LDL-C, $p=0.067$. Less than 8% of the cohort achieved 50%LDL-lowering and target LDL-C<1.8mmol/l.

Discussion & Conclusion

Despite being younger, probands with LDLR variants had significantly higher baseline TC and LDL-C. Probands attaining LDL-C goals were low, suggesting under-treatment or inadequate response. Increased treatment awareness in these patients should be emphasized.

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Basic Science / Translational Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-BSTR-03	Infectious Diseases	Basic Science / Translational Research

Authors

S.P. SADARANGANI⁴, Q. FAN¹, L.L.GOH⁵, W.X. LIAN⁵, G.L. TOH⁵, C. TAN¹, J. CHONG¹, G. WONG¹, B.E. YOUNG⁴, R. DALAN⁴, T.W. YEO³

¹Agency for Science, Technology and Research (ASTAR)(Singapore), ²Duke-NUS Graduate Medical School (Singapore), ³Lee Kong Chian School of Medicine (Singapore), ⁴National Centre for Infectious Diseases (Singapore), ⁵Tan Tock Seng Hospital (Singapore)

Title

Associations of host immunometabolic gene polymorphisms identified via targeted next generation sequencing with humoral and cellular immune responses to influenza vaccine among older adult community cohorts in Singapore

Background & Hypothesis

We hypothesize host immunometabolic gene polymorphisms are associated with influenza vaccine immune responses which may translate to designing more effective vaccines especially for older adults.

Methods

The DYNAMIC and TROPICS clinical trials enrolled community-dwelling older adults ≥ 65 years old in Singapore. Participants received standard-dose influenza vaccine with pre-vaccination and one-month post-vaccination haemagglutination inhibition (HAI) assays (both cohorts) and influenza-specific IFN-gamma ELISPOT (DYNAMIC). Coding regions for six immunometabolic genes (LEP, LEPR, ADIPOQ, ADIPOR1, PPARG, and VDR) were sequenced in Chinese participants from DYNAMIC (n=142) and TROPICS (n=121). Genotype-phenotype associations were performed, adjusting for age, gender, and cohort effect via linear regression. Gene-based burden and kernel association tests were performed for functional variants at MAF $\leq 5\%$.

Results

Gene-based tests revealed functional low frequent variants in ADIPOQ associated with log₂ influenza A/H3N2 fold rise in the TROPICS cohort (p=0.003, burden test) with variants c.65C>T (p=0.023) and c.722A>C (p=0.025) most strongly associated. LEPR was associated with log₂ influenza A/H1N1 fold rise in the DYNAMIC cohort (p=0.005, burden test), with c.2875T>C (p=0.001) and c.-5G>C (p=0.007) showing significant associations.

LEPR was associated with increased IFN-gamma ELISPOT log₂ SFU (spot forming unit) fold rise (p=0.005; burden test) in the DYNAMIC cohort, with c.1701C>T showing the strongest association (p=0.006), followed by c.1968G>C (p=0.033). ADIPOR1 c.556T>C was associated with higher log₂ SFU fold rise (p=0.012).

Discussion & Conclusion

Host immunometabolic gene polymorphisms play a role in immune responses post-influenza vaccination. Further mechanistic studies and studies on the relative importance of these polymorphisms are needed.

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Basic Science / Translational Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-BSTR-04	Orthopaedic Surgery	Basic Science / Translational Research

Authors

M.F.CHAN², S.DELEEP³, N.H¹, N.ARIYARATNE¹, S.M.CHOU³, D.SENG⁴

¹Medairum (Singapore) ²MOH Holdings Pte Ltd (MOHH) (Singapore), ³Nanyang Technological University (Singapore), ⁴Woodlands Health (Singapore)

Title

Is lag screw fixation alone enough for transverse patella fractures? - A Biomechanical Analysis

Background & Hypothesis

Tension-band wiring (TBW) is a traditionally described technique for fixation of patella fractures. Unfortunately, fixation failure and complications require implant removal in up to 52% of cases. Alternative fixation techniques including cannulated screw fixation with modified tension-band constructs have been developed. However, there remain few biomechanical studies comparing TBW and screw fixation with or without a tension-band construct. We perform a biomechanical analysis to quantify the fixation strength of these techniques.

Methods

A biomechanical study comparing four patella fixation constructs in a synthetic patella was performed. These include:

1. TBW
2. Cannulated Lag Screw (CLS) fixation alone
3. CLS with additional Permatape suture tension band
4. CLS with additional cerclage wire tension band

Each construct was tested six times and the mean load to failure was calculated. Statistical analysis using a one-way variance of analysis test was performed.

Results

TBW was the weakest construct with a mean load to failure of 535 N. CLS alone had a 32% higher load to failure compared to TBW ($p=0.011$). Adding a modified tension band with CLS increased the load to failure by 27 - 45% ($p < 0.001$). However, there was no significant difference between the addition of either a suture or wire to the fixation construct.

Discussion & Conclusion

CLS alone may be a more effective fixation strategy compared to TBW in simple transverse patella fractures as it is stronger and does not require the placement of subcutaneous implants. In addition, a tension band can be added to CLS to significantly improve fixation strength when needed.

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Basic Science / Translational Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-BSTR-05	Endocrinology	Basic Science / Translational Research
<p>Authors C.S.H.TAN⁴, K.X.KEE⁴, L.W.T.CHAN⁴, Y.SONG⁴, R.F.VASANWALA³, F.K.P.YAP³, W.Y.C.KON⁶, Y.J.CHEE⁶, W.J.LOH², Z.LIM⁵, E.C.K.YEOH¹, T.SUBRAMANIAM¹, C.F.SUM¹, S.C.LIM⁴</p> <p>¹Admiralty Medical Centre (Singapore), ²Changi General Hospital (Singapore), ³KK Women's and Children's Hospital (Singapore), ⁴Khoo Teck Puat Hospital (Singapore), ⁵NHG Polyclinics (Singapore), ⁶Tan Tock Seng Hospital (Singapore)</p> <p>Title The clinical utility of multiple islet autoantibodies, including zinc transporter-8 (ZnT8) and islet antigen-2 (IA2) autoantibodies, in delineating autoimmune-diabetes among young-onset diabetes prior to molecular genetic testing for monogenic diabetes</p> <p>Background & Hypothesis Glutamic acid decarboxylase autoantibody (GADA) is a common clinical biomarker used to delineate type 1 diabetes (T1D) or autoimmune-diabetes from common garden variety type 2 diabetes or rarer forms of diabetes (i.e., monogenic diabetes or MODY). In a multi-ethnic cohort, we explored utility of less conventional putative autoantibodies (ZnT8A and IA2A) in identifying autoimmune-diabetes among individuals referred for MODY genetic testing.</p> <p>Methods GADA, ZnT8A and IA2A were measured in 405 young-onset (≤35 years) participants using radioimmunoassay method or enzyme-linked immunosorbent assay method. Genetic testing for MODY was carried out as part of NHG-KTPH Monogenic Diabetes Registry study.</p> <p>Results 37/405 (9.1%) participants were autoantibody-positive (9 GADA, 9 IA2A, 7 ZnT8A, 1 GADA + IA2A, 4 GADA + ZnT8A, 6 IA2A + ZnT8A and 1 GADA + IA2A + ZnT8A). Among non-MODY participants (n=355), individuals with ≥1 autoantibody (n=36) were mostly males and presented with clinical features resembling those of autoimmune-diabetes. They presented with significantly lower onset age, BMI, SBP, DBP, triglycerides, TG/HDL ratio, C-peptide, C-peptide-to-glucose ratio, and significantly higher HDL and estimated glucose disposal rate (eGDR) compared to individuals without autoantibody. Individuals positive for IA2A and/or ZnT8A had significantly lower age of onset, DBP, triglycerides, C-peptide, C-peptide-to-glucose ratio and significantly higher eGDR compared to those positive for GADA.</p> <p>Discussion & Conclusion IA2 and ZnT8 autoantibodies identified an additional 5.4% of individuals with autoimmune diabetes compared to 3.7% with GADA alone. Our data supports multiple islet autoantibody testing (beyond GADA) in delineating autoimmune-diabetes in the clinics and prior to costlier molecular genetic testing for MODY.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
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Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-CR-01	Orthopaedic Surgery	Clinical Research
<p>Authors S.K.K.CHUA¹, C.J.LIM², B.Y.TAN²</p> <p>¹MOH Holdings Pte Ltd (MOHH) (Singapore), ²Woodlands Health (Singapore)</p> <p>Title Psychological factors strongly associated with poor function outcomes and quality of life (QOL) in knee osteoarthritis</p> <p>Background & Hypothesis Recent studies have pointed towards a biopsychosocial model in better prognosticating and managing chronic conditions like osteoarthritis. However, there remains a paucity in evidence exploring specific psychological factors impacting knee osteoarthritis outcomes. We studied the association of various psychological factors on patient-reported outcomes.</p> <p>Methods This was a cross sectional study of patients who received non-operative treatment for knee osteoarthritis. Psychological measures included: Patient Health Questionnaire-4 (PHQ4), Brief-Fear-Of-Movement (BFOM), and Pain, Enjoyment of Life and General Activity (PEG). Functional outcomes and QOL, namely the Knee Injury and Osteoarthritis Outcome Score (KOOS) and EuroQol-5-Dimensions Visual-Analogue-Scale (EQ5D-VAS) were assessed. The association between the measured psychological factors and KOOS/EQ5D-VAS was analysed using multiple linear regression adjusting for age, gender, body mass index and osteoarthritis duration.</p> <p>Results The study included 563 patients. BFOM (coef:-0.76; 95%CI:-1.09,-0.43), PEG (coef:-4.09; 95%CI:-4.48,-3.78), and PHQ4 (coef:-2.56; 95%CI: -3.52,-2.35) were observed to be significantly associated with KOOS. Similar findings were observed in EQ5D-VAS with BFOM (coef:-1.00; 95%CI:-1.33,-0.66), PEG (coef:-2.34; 95%CI:-2.82,-1.86) and PHQ4 (coef:-1.92; 95%CI:-2.41,-1.42) too. All associations were highly significant (p<0.001).</p> <p>Discussion & Conclusion This was the first large-scale study done on an Asian population showing psychological factors including kinesiophobia, depression, anxiety and pain interference negatively impacts functional outcomes and quality of life in knee OA patients. This emphasizes important associations and utility in recognizing these psychological measures in the developing knee OA screening and management strategies.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Clinical Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-CR-02	Clinical Immunology	Clinical Research
<p>Authors S.M.S.LEE¹, C.W.LIM¹, L.L.GOH¹, B.Y.H.THONG¹, K.P.LEONG¹, L.A.F.CHIA¹, L.W.KOH¹, W.L.J.TAN¹, Y.L.G.Chan¹, S.C.TAN¹, M.L.C.TEO¹, X.R.LIM¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p>		
<p>Title A Retrospective Analysis: Utility Of Genetic Testing In Adults With Suspected Inborn Errors Of Immunity</p>		
<p>Background & Hypothesis Inborn errors of immunity (IEIs) are germline disorders that may manifest as immunodeficiency and autoinflammation. There is hesitancy to perform genetic testing in adults as IEIs are perceived to present early in life. We aim to retrospectively describe the utility of genetic testing in a cohort aged 18 years and above.</p>		
<p>Methods Consecutive patients with suspected IEI were referred for pre-test genetic counselling. Individuals who agreed to proceed underwent either Whole Exome Sequencing (WES), Next-generation sequencing (NGS) panel or Sanger sequencing. The results were interpreted by a multi-disciplinary team.</p>		
<p>Results A total of 22 patients were referred for pre-test genetic counselling between November 2020 to March 2023, of which three declined genetic testing. The median age of symptom onset was 22 years (range 15 months - 71 years). The median age of genetic counselling was 44 years. Ten individuals had immunodeficiency. The remainder had autoinflammatory disorders (9), Type 3 hereditary angioedema (1), haemophagocytic lymphohistiocytosis (1), and C3 glomerulopathy (1). Out of the 19 individuals tested, 15 underwent NGS panels, one underwent trio WES and three underwent Sanger sequencing. A clinically consistent disease-causing variant was detected in eight individuals (42.1%), comprising CTLA4 haploinsufficiency (2), STAT1 gain-of-function (1), GATA2 deficiency (1), DADA2 syndrome (2), C3 glomerulopathy (1) and VEXAS syndrome (somatic mutation) (1). A clinically actionable outcome was achieved in 11/19 (57.8%) individuals, as some had negative results that impacted prognosis and treatment.</p>		
<p>Discussion & Conclusion We describe a diagnostic rate of 42.1% and a high clinical actionability in adult cohort, providing a compelling argument for genetic testing.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Clinical Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-CR-03	General Surgery	Clinical Research
<p>Authors ZJ. LO⁴, M.H.W. MAK³, S.LIANG⁴, R.C. CHONG³, Z. LI, E. YONG³, G.W.L³. TAN, Y.M. CHAN³, C.C. GOH³, P.T. LAI³, H.M. TAN³, J. RODRIGUEZ¹, M. LI¹, R. KOPPARTI², T. WEYDE², S. SMIT²</p> <p>¹AITIS (Singapore), ²AITIS (United Kingdom), ³Tan Tock Seng Hospital (Singapore), ⁴Woodlands Health (Singapore)</p> <p>Title Development of an Explainable Artificial Intelligence Model for Asian Vascular Wound Images</p> <p>Background & Hypothesis Chronic wounds contribute significant healthcare and economic burden. Explainable artificial intelligence (XAI) methods in wound imaging analysis is promising. We aim to develop an XAI model for analyzing Asian Vascular wound images.</p> <p>Methods 2957 images from a vascular wound images registry utilized to train, validate, and test the model for wound classification (Neuro-Ischemic Ulcer, Surgical Site Infections, Venous Leg Ulcers, and Pressure Ulcer), measurement, and segmentation. Semantic Segmentation models, Convolutional Neural Networks, Vision Transformer and Transfer Learning were utilized for model training. GradCam, LIME, and SHAP were used to evaluate model explainability. The model was evaluated for accuracy and AUROC. Post development, the model was evaluated on additional 15476 unlabelled images. Results of the XAI model are demonstrated on a web-browser application.</p> <p>Results Model accuracy for wound classification was 82.69% with 61.90% explainability. Measurement of width and length was 92.99% accurate with 82.50% explainability, with mean depth accuracy 82.65% and explainability 68.46%. Wound segmentation accuracy was 82.65% with explainability 82.65%. Post development, model performance on unlabelled images for wound classification achieved AUROC of 0.99 with mean accuracy 82.65% and explainability 60.32%. Wound measurement achieved AUROC 0.92, mean accuracy 82.65% and explainability 82.65% for width and length, and AUROC 0.97, mean accuracy 82.65% and explainability 68.46% for depth. Wound segmentation achieved AUROC 0.95, mean accuracy 82.65% and explainability 82.65%.</p> <p>Discussion & Conclusion Using XAI, we developed an application for analysis of Asian wound images with accuracy and explainability. It can be utilized as a clinical decision support system and integrated into healthcare electronic systems in future.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Clinical Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-CR-04	Endocrinology	Clinical Research
<p>Authors H.KOH², J.H.X.LIN², C.LANG², S.M.CHOW², W.Q.ONG¹, D.CHAN¹, F.F.AW², S.F.LIM¹, L.XIA¹, Y.SHAO², Y.N.THAM², M.K.S.LEE², R.DALAN¹, K.W.THAM², T.QUEK, W.H.HOI², C.HOONG²</p> <p>¹Tan Tock Seng Hospital (Singapore), ²Woodlands Health (Singapore)</p>		
<p>Title Flash CONTinuous glucose monitoring in TRansition to Outpatient: Libre for type 2 Diabetes Mellitus (CONTROL-DM)</p>		
<p>Background & Hypothesis Hospitalized patients with poorly controlled diabetes often need insulin therapy to improve glycaemic control. As patients transit to discharge and recovery at home, various factors influence the maintenance of diabetes control. We hypothesised that Flash Glucose Monitoring (FGM) improves glycaemic control and patient satisfaction, compared to finger-prick self-monitoring of blood glucose (SMBG) during this transition.</p>		
<p>Methods We conducted a 12-week pilot study in 34 hospitalised T2DM patients on insulin (HbA1c >9%) upon transition to discharge. Patients were randomized either to (Group A) Freestyle Libre FGM given at weeks 0,6 and 12, or SMBG (Group B) for the entire study duration. Primary outcome was HbA1c measurement at week 12. Secondary endpoints included patient satisfaction, motivation and quality-of-life (QoL) using surveys Diabetes Distress Score (DDS), Glucose Monitoring Satisfaction Survey (GMSS) and Audit of Diabetes-Dependent QoL. Healthcare professionals' timed activities were measured for resource utilization.</p>		
<p>Results Overall, HbA1c improved by 4.90% (95%CI: 3.55-5.25%, p<0.001) over 12 weeks with no significant difference between groups [A: 4.80%, 95%CI: 3.35-5.75%, p=0.0017; B: 5.00%, 95%CI: 3.10-5.50%, p<0.001]. GMSS, QoL scores and time-spent were similar between groups. HbA1c improvement was positive correlated with higher GMSS score (p=0.007) and shorter duration of T2DM (p=0.037).</p>		
<p>Discussion & Conclusion FGM is a feasible alternative to SMBG in the transitional-care period with clinically significant improvements in HbA1c in patients with poorly-controlled T2DM, without increasing DM-related stress or resource utilization.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Clinical Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-CR-05	Endocrinology	Clinical Research
<p>Authors A.MOH², S.LOW², K.ANG², W.E.TANG³, Z.LIM³, S.TAVINTHARAN¹, C.F.SUM¹, S.C.LIM²</p> <p>¹Admiralty Medical Centre (Singapore), ²Khoo Teck Puat Hospital (Singapore), ³NHG Polyclinics (Singapore)</p> <p>Title A new use for the metabolic surgery diabetes remission (MDR) score as a predictor of progressive kidney function decline in type 2 diabetes</p> <p>Background & Hypothesis In 2020, we constructed a new scoring system to predict type 2 diabetes (T2D) remission one-year after metabolic surgery, termed metabolic surgery diabetes remission (MDR) score. The algorithm reflects pancreatic β-cell function and insulin resistance, which are known determinants of aortic stiffening. This longitudinal study assessed the relationship between MDR and kidney dysfunction in T2D, and the mediation role of aortic stiffness.</p> <p>Methods T2D adults (n=2,057, age:57\pm11 years, 51.6% men) were recruited by the SMART2D study and followed for 6 years. The 10-point MDR score was calculated based on baseline age, diabetes duration, HbA1c, and b-cell function. Aortic stiffness was estimated by carotid-femoral pulse wave velocity (PWV). Baseline estimated glomerular filtration rate (eGFR)<60 ml/min/1.73m² was classified as chronic kidney disease (CKD). Progressive kidney function decline was defined as \geq40% decline in eGFR over time from baseline.</p> <p>Results Cross-sectionally, lower MDR score was associated with increased CKD prevalence (risk ratio=0.86, 95% CI=0.82-0.90, P<0.001). Approximately 35% of the followed-up patients experienced progressive kidney function decline. Baseline MDR predicted kidney function worsening over time in the unadjusted Cox regression model (hazard ratio=0.84, 95% CI=0.80-0.88, P<0.001). The association persisted after accounting for demographics, metabolic and renal factors, and medications (hazard ratio=0.90, 95% CI=0.86-0.95, P<0.001), particularly in body mass index\geq27 kg/m². Further adjustment for PWV diminished the relationship. PWV partially mediated 13% of the total effect of MDR on outcome.</p> <p>Discussion & Conclusion MDR is a useful composite marker for progressive kidney function decline in T2D, especially among patients with obesity.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Professions Education)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HPE-01	Clinical Instructor	Health Professions Education
<p>Authors D. GAYATHIRI¹, T. HUISAN¹, C. GEOK FONG¹, R. RAADHIKA¹, T.S.T. GLORIA¹, S.H. GERALDINE¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p> <p>Title Patient Management Workshop for Final Year Nursing Students</p> <p>Background & Hypothesis It is essential for nursing students to manage patients effectively in their transition to registered nurses. A workshop was introduced for final year nursing students consisting of three components to enhance critical thinking and problem-solving skills. This study seeks to investigate if the participant’s perceived self-efficacy on overall patient management improved after the workshop.</p> <p>Methods An anonymous pre and post survey was administered to 94 participants, utilising a 5-point Likert scale (1=least,5=highest score) to measure participants’ perceived self-efficacy on overall patient management. The survey gathered quantitative data on participants perceived self-efficacy on the three components and qualitative feedback was collected to gain suggestions to improve the workshop.</p> <p>Results A paired sample test was conducted and the results showed that all the three components had an increase in scores. The biggest increase was in the third component that revealed that the participants mean test score (M=3.14, SD=0.79) was significantly improved after the workshop (M=4.24, SD=0.78), p<.01. The analysis shows that the workshop was effective in increasing the perceived ability to manage patients in the clinical setting.</p> <p>Discussion & Conclusion The patient management workshop for final year nursing students serves as an effective avenue to develop problem solving skills and critical thinking. The results affirm its positive impact on participants ability to provide effective patient care during PRCP. Further exploration of performance in the clinical setting is recommended.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Professions Education)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HPE-02	Health Professions Education	Health Professions Education
<p>Authors W.P.LIM¹, J.H. KAN¹, E. LIM¹, K.F. KOH</p> <p>¹Woodlands Health (Singapore)</p> <p>Title Constructing Professional and Organisational Identity for Health Professions Education in a New Hospital: A Thematic Analysis</p> <p>Background & Hypothesis Establishing a cohesive and effective healthcare environment in a new hospital is paramount to ensure optimal patient care. A crucial aspect of achieving this objective lies in aligning professional identity among clinical educators with the organisational identity of the hospital. This study explores how clinical educators in a start-up hospital perceive their professional identity in the context of developing as a learning organisation.</p> <p>Methods Four focus groups comprising clinical educators across health professions discuss their aspirations for clinical education, informed by three guiding questions on (i) core ethics, (ii) principles, and (iii) purpose and direction. Eleven pages of textual data comprising 2342 words documenting 135 minutes of discussion were generated. Informed by a constructivist approach, thematic analysis was conducted to explore and identify themes inductively. Initial codes were generated and iteratively refined, then organised into higher-order themes.</p> <p>Results Five main themes arose from the thematic analysis. The first theme described the values and principles in health professions education, focusing on the embodiment of professionalism, learning autonomy and patient-centricity. The themes of learning culture and learning systems reflected how educators saw themselves as vessels for facilitating prosocial aspects of learning. The fourth theme focused on the educator as the embodiment of the highest practice standards, teaching beyond domain expertise and facilitating systemic practice. Lastly, the theme of translation and outcomes underscores the end goal of health professions education in developing professionals for tomorrow's healthcare.</p> <p>Discussion & Conclusion Aligning professional and organisational identity helps educators develop a sense of ownership and commitment to the institution's success.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Professions Education)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HPE-03	Clinical Education	Health Professions Education
<p>Authors P.Y.A.NG¹, G.F.CHUA¹, P.W.GOH¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p> <p>Title Against the odds: Accelerating workforce ready final year students during the pandemic outbreak</p> <p>Background & Hypothesis In the face of lean manpower during the long pandemic outbreak, MOH extended the final year nursing internship posting duration from 10 to 15 weeks to alleviate healthcare work strain. To assimilate final year nursing students into the role of a registered nurse, four training programmes were introduced into the internship period. The aim of this study is to determine if the training programmes were effective in shortening the probation duration required by the students when they returned as new staff.</p> <p>Methods In this retrospective observational study, the probation duration of 66 new staff who underwent the internship plus four training programmes as students, were compared to that of 55 new staff who underwent the internship only. A post-internship evaluation was also conducted to gather feedback from the students on the usefulness of the training programmes.</p> <p>Results The results show that the mean probation duration of staff who underwent the internship plus training programmes (m=6.05 months, SD=1.81), and those who underwent the internship only (m=5.98months, SD=1.54) is similar (p=0.591). It is notable that 27% of staff who underwent the training programmes completed their probation in < 6 months. In addition, 99.3% of the students felt that the training programmes were useful, stating that the intravenous medication (IVM) administration course was most helpful.</p> <p>Discussion & Conclusion While the training programmes did not significantly shorten the probation period, the students indicated that it was effective overall in equipping them to be workforce ready. In future, similar studies may be conducted with an emphasis on IVM administration.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Professions Education)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HPE-04	Psychiatry	Health Professions Education
<p>Authors A. Y.P. WONG¹, M. Y. S. CHAN¹ ¹Tan Tock Seng Hospital (Singapore)</p> <p>Title Enhancing medical education in Psychiatry through Art - a new initiative in medical education for undergraduate students rotating through the Department of Psychiatry in Tan Tock Seng Hospital</p> <p>Background & Hypothesis Medical education has traditionally focussed on scientific knowledge acquisition and clinical skill training. Integrating art expression into medical education aims to encourage self-reflection and empathy in students and provide an outlet for stress relief for better mental health and well-being. This initiative aims to foster a deeper understanding of psychiatric conditions through art and bridge the gaps in conventional medical education.</p> <p>Methods Art expression is included as a pilot training curriculum for medical students doing their psychiatry posting in Tan Tock Seng Hospital for the academic year of 2023/24. This session involves students drawing with an art medium of their choice, with a specific directive, under the supervision of an advanced practice nurse. Pre/post intervention assessments, including focus group discussion and feedback are conducted to gauge students' perceptions and learning outcomes.</p> <p>Results Preliminary results indicate a positive impact on students' comprehension of psychiatric conditions through art and their observation skills/critical thinking which are crucial in aiding diagnosis. It also facilitates a deeper understanding of the intricate aspects of psychiatry and introduces art as a mode of stress relief for the students.</p> <p>Discussion & Conclusion Art expression incorporated as part of medical education offers a promising avenue for enriching the medical education. By integrating art expression into the undergraduate Psychiatry curriculum, medical educators can provide a safe and supportive learning space to foster greater self-awareness, emotional intelligence and empathy among medical students. This novel approach could create a more diverse and creative learning approach to the medical curriculum beyond Psychiatry.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Professions Education)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HPE-05	Ophthalmology	Health Professions Education
<p>Authors C.C.YIP², P.K.LIM⁴, F.W.LAI², Y.Y.HAH², K.G.AU EONG¹, JAMES J. DING³</p> <p>¹International Eye Cataract Retina Centre (Singapore), ²Khoo Teck Puat Hospital (Singapore), ³Medical Classification Centre (Singapore), ⁴MOH Holdings Pte Ltd (MOHH) (Singapore)</p> <p>Title Teaching Nurses Ophthalmic Surgery Protocol: Are Cognitive-theory-based Teaching Slides Superior to Traditional Teaching Slides?</p> <p>Background & Hypothesis Cognitive Theory of Multimedia Learning (CTML), based on Cognitive Load (CL) theory and dual channel principle, improves the instructional design of educational materials to optimize learning CL. We compare the educational efficacy of using CTML-based Teaching Slides (CTS) versus Traditional Teaching Slides (TTS) in e-learning.</p> <p>Methods This investigator-masked, experimental study involved Operating Room (OR) nurses randomized to e-learn a protocol in assisting cataract surgery, using either CTS (n=22) or TTS (n=22). Protocol knowledge at baseline (Test-1), immediate post-learning (Test-2) and 1-month post-learning (Test-3) were assessed using short-answer-questions.</p> <p>Results Data are non-parametric, presented as median [interquartile range]. Using Mann-Whitney U test to compare CTS-group versus TTS-group, there were no differences in Test-1 (3.50[3.63] versus 4.50[2.00], p=0.24) and Test-3 scores (4.50[2.63] versus 3.75[2.13], p=0.21). However, CTS-group had higher Test-2 scores (6.00[1.63] versus 4.75[1.63], p=0.02). Friedman test compared test performances across visits (intra-group) and was significant for both groups (all p<0.01). Post-hoc Wilcoxon-Signed Rank test (Bonferroni adjustment) demonstrated increased Test-2 scores in CTS-group (p<0.01), and a decline in Test-3 scores for both groups (all p<0.01). Nursing seniority and OR experience had no correlation with any test scores (Spearman's Rho, all p>0.05).</p> <p>Discussion & Conclusion CTS is superior to TTS in immediate knowledge acquisition, possibly by optimizing CL presentation to visual and auditory channels. Knowledge decay, likely from insufficient practice, is comparable between both modalities. CTS is novel and efficacious in teaching OR nurses surgery protocol knowledge and may be applicable to other disciplines.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Services Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HSR-01	Public Health / Clinical Epidemiology	Health Services Research
<p>Authors A.H.Y.HO², S.H.X.MA², M.K.B.TAN⁴, A.TENG³, O.BEAUCHET¹, K.GALERY¹</p> <p>¹McGill University (Canada), ²Nanyang Technological University (Singapore), ³National Gallery Singapore, ⁴Sheffield Hallam University (United Kingdom)</p>		
<p>Title Effects of Participatory Art-Based Activity On Health of Older Community-Dwellers: Results from a Randomized Control Trial of the Singapore A-Health Intervention</p>		
<p>Background & Hypothesis Participatory art could alleviate the adverse health consequences associated with ageing as it has been found to support the promotion, prevention and management of health and wellbeing conditions. However, clinical trials remain limited in Asia.</p>		
<p>Methods A single-site, open-label Randomized Control Trial were used to evaluate a standardized 12-week Participatory Art-Based Activity on Health of Older Community-Dwellers – the Singapore A-Health Intervention. 112 participants aged 60 and above were randomized into the intervention group (n=56) or inactive control group (n=56). Participants completed four standardized assessments at baseline, 5-, 9-, and 12-week follow-up.</p>		
<p>Results Mixed ANOVA analyses revealed a significant positive effect of time [F(2.77, 296)=3.569, p=.017, partial $\eta^2=.032$] and group [F(1, 107)=4.635, p=.034, partial $\eta^2=.042$] for the outcome variable of frailty. Follow-up repeated measure ANOVA and post hoc pairwise comparisons indicated a significant reduction in frailty over time in the intervention group [F(2.66, 141)=4.914, p=.004, partial $\eta^2=0.085$] from 5 weeks (M=1.63, SD=2.02) to 9 weeks (M=1.02, SD=1.60) into the A-Health intervention with a medium effect size. Furthermore, repeated measure ANOVA and post hoc pairwise comparisons showed significant improvements in wellbeing among intervention group participants over time from after the first session to the final session with medium effect size.</p>		
<p>Discussion & Conclusion The findings indicate a positive effect on frailty and wellbeing and demonstrates the potential of a structured art and museum-based intervention as a valuable resource for health and mental health promotion among ageing populations. Implications for art-based social prescribing are discussed.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Services Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HSR-02	Palliative Medicine	Health Services Research
<p>Authors S.NG¹, W.S.TAN¹, J.S.RETNAM², R.CHONG², L.YIU², R.NG³, A.LAM²</p> <p>¹National Healthcare Group Corporate Office (Singapore), ²Tan Tock Seng Hospital (Singapore), ³Woodlands Health (Singapore)</p> <p>Title Barriers to participation in Advance Care Planning for next-of-kin of nursing home residents: a multi-method evaluation</p> <p>Background & Hypothesis Readiness for advance care planning (ACP) and uncertainty about end-of-life (EOL) decisions in nursing home (NH) residents and their next-of-kin (NOK) could affect the effort to implement ACP and concordant EOL care in NHs. We aimed to understand the barriers to participating in ACP among NOKs.</p> <p>Methods A multi-method evaluation approach was adopted. We surveyed NOKs of NH residents without decision-making capacity, prior to starting an ACP discussion. The ACP Engagement Survey (AES), modified to reflect decision-making for both their family member and themselves, assessed participants' self-efficacy and readiness for ACP. The low-literacy Decisional Conflict Scale (DCS) assessed participants' perceptions of feeling uninformed, unclear about their values, unsupported and uncertain towards EOL care decision-making. Higher scores, which ranged from 0 to 100, indicated higher sentiments of conflict. NH ACP leaders were also interviewed on their experience of engaging NOKs for ACP discussions.</p> <p>Results 54 NOK completed the survey. Most participants were confident and ready to discuss and document their family member's preferences or do so for themselves (72%-83%). Participants reported strongest sentiments towards feeling uninformed about the options available (median=50, interquartile range=17-50). From the NH leaders' perspective, some NOKs were not ready for ACP as they either viewed ACP as giving up on their loved ones, preferred to involve other family members, or prioritised other administrative matters.</p> <p>Discussion & Conclusion Prior to an ACP discussion, most participants were confident and ready. However, there were varied barriers in engaging NOKs to start a discussion, which must be addressed to increase their readiness for ACP.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Services Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HSR-03	Respiratory Medicine	Health Services Research
<p>Author M.J.PEREIRA², P.P.CHIEH², J.A.D.MOLINA², R.Y.TAY¹, S.TAO³, A.TAN³, Y.CHAN³, W.S.TAN²</p> <p>¹Dover Park Hospice (Singapore), ²National Healthcare Group HQ (Singapore), ³Tan Tock Seng Hospital (Singapore)</p> <p>Title Home Ventilation and Respiratory Support Service Patients – Where do they pass away?</p> <p>Background & Hypothesis Tan Tock Seng Hospital's (TTSH's) Home Ventilation and Respiratory Support Service (HVRSS) manages patients with chronic respiratory failure from progressive conditions of various causes needing long-term home ventilation support. Currently, there is no information on different places of death (POD) rates for these patients. We examined rates of different POD, associated HVRSS patient profiles, and concordance with available Advance Care Plans (ACPs) preferences. We hypothesised the socio-demographic and clinical characteristics of HVRSS decedents with dissimilar POD – home, hospital or elsewhere, are different.</p> <p>Methods This was a retrospective cohort study of patients deceased by 2019, had ≥1 HVRSS encounter and sufficient electronic medical record documentation. We accessed the national Registry of Births and Deaths (RBD) for death-related information and linked RBD data to other data, either recorded by HVRSS/ACP team or manually extracted. Stepwise variable selection was subsequently conducted to construct the final regression model.</p> <p>Results Among 118 patients studied, 44% had home deaths, 53% died in hospitals, and 3%, elsewhere. The top two causes of death recorded in the RBD were chronic neurological disorder (40%), and others (38%). Fifty-two patients (44.1%) had ACPs, and the POD-ACP preference concordance was 57.1% (28/49). Patients with home deaths were 4.72x more likely to be on invasive ventilation (p=0.001), compared to in-hospital deaths. No other socio-demographic and clinical characteristics were significant.</p> <p>Discussion & Conclusion The POD rates and associated profiles of HVRSS decedents examined in this study may inform policy and practice of end-of-life care models that support HVRSS patients, particularly at their choice of place of demise.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Services Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HSR-04	Psychiatry	Health Services Research
<p>Authors S.SHAFIE¹, E.ABDIN¹, S.SHAHWAN¹, Y.ZHANG¹, P.WANG¹, P.SATGHARE¹, F.DEVI¹, S.C.TAN¹, M.SUBRAMANIAM¹, S.A.CHONG¹</p> <p>¹Institute of Mental Health (Singapore)</p>		
<p>Title Social support and intention to seek help among the general population in Singapore during Covid-19 pandemic</p>		
<p>Background & Hypothesis Social support has been found to influence help seeking for mental health issues. This study explores the association between social support and intention to seek help for psychological and emotional problems related to Covid-19 and its sociodemographic correlates.</p>		
<p>Methods This longitudinal study was conducted in the early (baseline) (n=1129) and middle phases (follow-up) (n=858) of the Covid-19 pandemic among Singapore residents, aged 21 years and above. Medical Outcomes Study Social Support Survey (mean score of ≥ 3 classified as high), Patient Health Questionnaire (cut-off ≥ 10), General Anxiety Disorder (cut-off ≥ 10) and Depression Anxiety and Stress Scale (cut-off ≥ 15) were administered to assess social support, depression, anxiety, and stress, respectively. Sociodemographic data and intention to seek help were also collected.</p>		
<p>Results Those with high social support at both phases (vs low social support) (OR: 3.71, p = 0.043), had anxiety (OR: 6.18, p = 0.045), experienced stress (OR: 12.46, p = 0.045), had primary and below (OR: 10.2, p = 0.04) and secondary education (vs university and above) (OR: 13.21, p = 0.001) were more likely to intend seeking help at follow-up. Conversely, those with depression (OR: 0.06, p = 0.028), and aged 65 and above (vs 21-34) (OR: 0.02, p = 0.000) were less likely to intend seeking help at follow-up.</p>		
<p>Discussion & Conclusion High social support, lower education, anxiety and stress were contributing factors in intention to seek help at follow-up. Encouragement from family members and friends might facilitate individuals' intention of seeking help for their mental well-being, especially the older age group.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
Best Poster Award (Health Services Research)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-HSR-05	Advance Care Planning	Health Services Research
<p>Authors C.C.YU², J.Y. TANG², S.F.GOH², J.A.LOW³, A.H.Y.HO⁴, C.J.NG³, M.T.K.CRUIZ¹, R.K.P.CHONG⁷, K.K.Y.CHEUNG⁶, S.MENON⁵, R.H.L.NG⁸</p> <p>¹Division of Advanced Internal Medicine (Singapore), ²Geriatric Education and Research Institute (Singapore), ³Khoo Teck Puat Hospital (Singapore), ⁴Nanyang Technological University (Singapore) ⁵National University of Singapore, ⁶Singapore General Hospital (Singapore), ⁷Tan Tock Seng Hospital (Singapore), ⁸Woodlands Health (Singapore)</p>		
<p>Title Understanding Moral Distress and Adaptive Responses of Healthcare Professionals in Advance Care Planning: Qualitative Findings from a Sequential Exploratory Mixed-methods Study</p>		
<p>Background & Hypothesis Advance Care Planning (ACP) allows for communication of patient's preferred care plans in the future with family members and healthcare professionals (HCPs) in the event if patient falls seriously ill. Oftentimes, HCPs and ACP facilitators may face moral distress in honouring and facilitating the ACP. The aims of this current study are to examine factors of moral distress and ethical conundrums faced, and explore the coping strategies used.</p>		
<p>Methods This abstract presents the findings of the qualitative phase of a mixed-methods study. In-depth interviews were conducted with a sample of ACP facilitators and frontline healthcare providers (n=20). Framework analysis was used to interpret the results.</p>		
<p>Results We identified common challenges that contributed to moral distress. These included (i) managing uncertainty and conflict between patient and their loved ones, (ii) respecting or honouring decisions that are contrary to one's personal values, (iii) difficulty in interpreting a poorly documented or outdated ACP discussion, (iv) managing differing opinions of stakeholders especially colleagues when honouring an ACP. This study also shed light on the importance of problem-focused coping, religious coping and collegial support in managing moral distress. Barriers and facilitators on discussion as well as those on honouring wishes were also examined.</p>		
<p>Discussion & Conclusion This study unveiled factors of moral distress and ethical conundrums during the process of ACP implementation, coping strategies, and to derive potential recommendations in ameliorating such distress as well as gaps in knowledge and systems. The findings will hopefully help in the development of future training programmes and policies to aid ACP implementation.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Best Poster Award (Nursing)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-NR-01	Psychiatry	Nursing
<p>Authors B.CHEN¹, Y. FU¹, Z. LI¹, J. LI¹, M. M. HERRERA¹, D. S. H. KOH¹</p> <p>Institute of Mental Health (Singapore)</p> <p>Title Use of Electroconvulsive Therapy in Adolescents in Singapore</p> <p>Background & Hypothesis Electroconvulsive therapy (ECT) is a well-established highly effective treatment for schizophrenia and mood disorders, however most of the evidence is derived from adult population with scanty evidence from adolescents. We sought to determine the use of ECT in adolescents in Institute of Mental Health (IMH) and evaluate the treatment outcome.</p> <p>Methods We conducted a retrospective naturalistic analysis of ECT registry data of patients aged from 12 to 19 years from March 2017 to March 2023. Descriptive analysis were used to analyze the demographics and clinical characteristics; Paired T-tests were used to compare the changes of clinical assessments scores including Brief Psychiatric Rating Scale (BPRS), Montgomery–Åsberg Depression Rating Scale (MADRS), Clinical Global Impressions Scale –Severity (CGI-S), and Montreal Cognitive Assessment (MoCA) after 6 sessions of treatment.</p> <p>Results Total 55 patients were included for analysis. There is significant improvement in BPRS ($p < 0.001$), MADRS ($p=0.005$), CGI-S ($p<0.001$) and average CGI-I score was 2.275 (SD 0.81) after 6 sessions of treatment. 52.9% of patients showed significant clinical improvement (defined as a $\geq 40\%$ improvement in BPRS psychotic subscales for schizophrenia, $\geq 50\%$ improvement of total BPRS scores for mania and catatonia, $\geq 50\%$ improvement of total MADRS scores for depression). There was no significant change in MoCA scores ($p=0.218$).</p> <p>Discussion & Conclusion Our preliminary findings show ECT is safe & effective for treatment of psychotic and mood disorders in adolescents. Further studies with bigger sample size and specific subgroup analysis are needed to establish effectiveness of ECT and identify predictors of response in this population of patients.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Best Poster Award (Nursing)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-NR-02	Community Health	Nursing
<p>Authors P.J.M.CHEE¹, S.P.LEE¹, W.T.CHEN¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p> <p>Title Effectiveness of Blood Pressure Educational Workshop and Activation Levels on Self-management and Self-Monitoring amongst Residents Enrolled to Active Aging Centres in Singapore- A Pilot Study</p> <p>Background & Hypothesis Hypertension is highly prevalent among local population and self-monitoring of blood pressure is essential for early detection of complications. Encouraging self-management may enhance patient's ability to effectively manage chronic diseases like hypertension. This study aims to explore the levels of activation and self-management among residents attending a blood pressure education workshop at an Active Aging Centre (AAC).</p> <p>Methods This study adopted a pre-and post-test evaluation questionnaire measuring knowledge and self-monitoring behaviors before and after a 2-hour blood pressure workshop. Convenience sampling was done to recruit residents enrolled to an AAC located in Central Singapore. The Patient Activation Measure (PAM)- 13 tool consisting of 13 questions was used. Descriptive statistics are used to analyze the data.</p> <p>Results A total of 19 residents participated in the workshop and completed the survey. Residents reported 'Strongly agree' (42.1%) and 'Agree' (57.9%) that the workshop was delivered effectively. An increased frequency of blood pressure monitoring by 31.6% was noted through comparing the monitoring rates pre- and post-intervention. The mean knowledge score increased from 2.74 to 4.0 across a 5-point Likert scale post-intervention. Out of four activation levels of empirically derived 100-point scale, participants were observed to have an average PAM level of 3 pre-workshop and an increased to 4 a month post-workshop.</p> <p>Discussion & Conclusion The blood pressure educational workshop has positively impacted the residents' understanding level, translating into an increase of self-efficacy and activation. However, future research still needs to further explore on possible gaps and barriers affecting activation in relation to self-management amongst local population.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Best Poster Award (Nursing)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-NR-03	Caregiving	Nursing
<p>Authors J.CHOO¹, E.CHEW¹, G.GLASS¹, E.Y.CHAN¹</p> <p>¹Tan Tock Seng Hospital (Singapore)</p> <p>Title A Comparison of Caregiver Burden in Singaporean Adult-Child and Spousal Caregivers</p> <p>Background & Hypothesis As Singapore’s population ages, the number of family caregivers supporting older adults to age in place is expected to rise. This study aims to compare the caregiver burden between adult-child caregivers and spousal caregivers.</p> <p>Methods We recruited 68 patient-caregiver dyads from a Singaporean tertiary hospital. Caregivers completed the 12-item Zarit Burden interview (ZBI). Potential contributors to ZBI identified in literature, including patients’ age, Charlson Comorbidity Index (CCI), Modified Barthel Index (MBI) as a measure of functional status, caregivers’ sleep hours, and caregiving time were collected. We applied an independent t-test to compare these variables between adult-child and spousal caregivers, calculating 95% Confidence Intervals (95% CI).</p> <p>Results Adult-child caregivers (n=46) reported significantly higher burden (mean=18.85, SD=9.37) than spousal caregivers (n=22) (mean=13.73, SD=7.77), MD=5.12, 95%CI:0.52-9.72, p<.05. They also cared for older care-recipients (mean=86.35, SD=6.26), as compared to the spousal caregivers (mean=75.23, SD=5.65), MD=11.12, 95% CI:7.98-14.26, p<.05. However, there were no significant differences in caregivers’ caregiving time, sleep hours, and patients’ CCI and MBI scores.</p> <p>Discussion & Conclusion Adult-child caregivers experienced a higher caregiving burden, compared to spousal caregivers and also cared for older care-recipients. However, the factors contributing to this difference could not be specifically determined in this study. One limitation was the use of univariate analysis, suggesting the need for further research using qualitative interviews and multiple linear regression to explore the interrelationships between these factors.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Best Poster Award (Nursing)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-NR-04	Respiratory Medicine	Nursing
<p>Authors, K.J.A.TEOH¹, T. LEE¹, S.Y.LEE¹, S. M. TAN¹, C. M. D. COLIAT¹, L. PRABHAKARAN¹, C. Y. GOH¹, N. S. B. AZMAN², P. HOU, P. H. PANG¹</p> <p>¹Tan Tock Seng Hospital (Singapore), ²Woodlands Health (Singapore)</p> <p>Title Inhaler adherence, distribution of risk factors and health outcomes amongst adult asthma patients</p> <p>Background & Hypothesis Adherence to inhaled corticosteroids is imperative in maintaining good asthma control and preventing exacerbations. This study aims to investigate the adherence to inhaler therapy, distribution of associated risk factors and health outcomes amongst asthma patients.</p> <p>Methods Asthma patients in Tan Tock Seng Hospital are recruited in this ongoing cross-sectional study. We administered the Test of Adherence to Inhaler (TAI) questionnaire and collected data on their baseline characteristics, medications and healthcare utilisation. In this preliminary analysis, we examine the distribution of adherence, bivariate associations between degree of adherence and potential risk factors, and the correlation between different methods of adherence assessment.</p> <p>Results Forty-nine patients using a total of 61 controllers were included in this analysis. Intermediate and poor adherence were found in 72.1% (N=44/61). These appeared to be associated with male gender (90.9%) and age below 55 years (84.6%), with no evidence of differential distribution in other risk factors. The non-mutually exclusive patterns of non-adherence were sporadic (N=43, 97.7%), deliberate (N=11, 25%), and unconscious (N=12, 27.3%). The most common causes of sporadic, deliberate and unconscious patterns were forgetfulness, intentional omission and erroneous inhaler technique respectively. Only 60% of these patients demonstrated good Medication Possession Ratio of ≥80%, compared to 82.4% of patients with good adherence, suggesting fair correlation between the two methods.</p> <p>Discussion & Conclusion Study recruitment is ongoing. We hope to identify potential risk factors for poor adherence. TAI could be a useful tool to assess the degree of adherence, identify the pattern of non-adherence and guide subsequent specific corrective interventions in at-risk population.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Best Poster Award (Nursing)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
BP-NR-05	Respiratory Medicine	Nursing
<p>Authors S.M.TAN¹, L. PRABHAKARAN¹, C.Y.GOH¹, S.Y.LEE¹, N.S.B.AZMAN², P.HOU², K.J.A.TEOH²</p> <p>¹Tan Tock Seng Hospital (Singapore), ²Woodlands Health (Singapore)</p>		
<p>Title Are patients using their inhalers correctly- A retrospective study</p>		
<p>Background & Hypothesis Inhaler technique is paramount to optimizing drug delivery and ensuring disease control. This study aims to investigate the inhaler technique competency of patients admitted to Tan Tock Seng Hospital (TTSH).</p>		
<p>Methods A retrospective review of patients who were admitted to TTSH from January to June 2022 and referred to Respiratory Nurses was conducted. Electronic case notes were reviewed to examine the documented assessment of inhaler technique.</p>		
<p>Results In a total of 430 patients, 52.6% (N=226) of them needed technique correction or teaching, with the highest percentage of error in Turbuhaler (44.4%), followed by Metered-Dose Inhaler (25.5%) and Ellipta (24.4%). The most common error for the above devices is insufficient inspiratory effort, coordination, and inability to hold breath, respectively. Most of the patients achieved technique competency through correction (N=111, 61%) or caregiver training (N=38, 21.1%), while the rest had to switch inhaler devices. Unsurprisingly, the incidence of technique errors in the elderly aged 65 years and above jumped from 39.6% (65 out of 164) to 50.0% (9 out of 18) in those with 2 inhaler devices versus 3 devices. Those of the younger age group however did not appear to demonstrate a similar trend with more inhaler devices.</p>		
<p>Discussion & Conclusion Care should be exercised when prescribing an inhaler regime consisting of multiple inhaler devices, especially in the elderly, as it makes them more prone to technique errors. Oftentimes, inhaler technique can be corrected therefore it should be checked at every possible encounter.</p>		

SHBC 2023 SCIENTIFIC COMPETITION

Finalist

AWARD CATEGORY: Singapore Primary Care Award (Poster)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
PCR-P-01	Family Medicine	Primary Care Research
Authors C.F.M.LEE ¹ , D. R. J. GIOVANNA ¹ , D. NG ¹ , G. DING ¹ , W. POH ¹ , Q. WANG ¹ , K. CHIA ¹ , M. KOH ¹ ¹ NHG Polyclinics (Singapore)		
Title Increasing exercising among community-dwelling older adults with Fear of falling		
Background & Hypothesis Fear of falling (FoF) leads to reduced exercise and functional decline. Exercise may reduce FoF and falls risk. This randomized controlled trial (RCT) aimed to compare the effectiveness of multi-component intervention versus Patient Education Materials (PEMs) for increasing exercise among community-dwelling older adults with FoF.		
Methods Patients aged 65 and above with FoF were recruited from seven primary care clinics since January 2022. Patients randomized to intervention group received one face-to-face and three telephone multi-component sessions which comprised exercise recommendations, cognitive behavioural therapy and motivational interviewing techniques. Both intervention and comparator groups received PEMs on strength and balance exercise recommendations. Exercise at baseline and three months was measured by the Incidental and Planned Exercise Questionnaire: Weekly Average (IPEQ-WA), met exercise target was defined as at least 150 minutes per week.		
Results Ninety-seven participants, mean age 75 years, 68% female and 87% Chinese, completed three-month follow-up. Overall, there was significant increase in the number of participants who met exercise target from baseline compared to 3 months later (from 36.1% to 49.5%, P= 0.037). However, Chi-square found no significant difference in number of participants who met exercise target between groups at 3 months (Intervention 52.1% versus comparator 47.9%, p=0.479).		
Discussion & Conclusion Preliminary results suggest both multi-component intervention and PEMs only as intervention, increased meeting exercise target among older adults with FoF. Further research is needed to evaluate intervention beyond exercise recommendations and the sustainability of such intervention. Exercise recommendations should be provided for all older adults with FoF.		

SHBC 2023 SCIENTIFIC COMPETITION

Finalist

AWARD CATEGORY: Singapore Primary Care Award (Poster)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
PCR-P-02	Family Medicine	Primary Care Research
Authors K.W.KEE ² , K.J.LEW ² , M.LOH ¹ , E.S.LEE ² ¹ Lee Kong Chian School of Medicine (Singapore), ² NHG Polyclinics (Singapore),		
Title An exploratory study of osteoporosis risk screening in post-menopausal Singaporean women		
Background & Hypothesis At present, the Agency for Care Effectiveness recommends the use of Osteoporosis Self-Assessment Tool for Asians (OSTA) or the Fracture Risk Assessment Tool (FRAX®) for early identification of patients at-risk of sustaining fragility fractures. As there are population health benefits for accurate screening of osteoporosis, this study explored whether more accurate screening for osteoporosis in post-menopausal females can be achieved.		
Methods Data for our study was a pilot sample from the Health for Life in Singapore (HELIOS) population cohort study. It consists of demographics, weight, height, laboratory test and dual energy X-ray absorptiometry readings from post-menopausal women (N = 740) who had never received treatment for osteoporosis. We explored if a popular gradient boosted tree algorithm XGBoost is able to predict the probability of osteoporosis (bone mineral density T-score ≤ -2.5) well. A random 80-20 split on our data was done to create a training (N = 591) and testing dataset (N = 149). We conducted 10-fold cross-validation on the training dataset to find the best parameters of XGBoost model and tested the predictive performance of the final fitted model on the testing dataset.		
Results Our model achieved an area under the receiver operator curve (AUROC) of 0.673 which is lower than the traditional OSTA model (AUROC = 0.799) by -0.126 (95% CI: -0.201, -0.050), p-value = 0.001.		
Discussion & Conclusion Our model performs poorer than OSTA at predicting osteoporosis. In order to achieve better predictive results, more experimentation is needed in the area of feature engineering or collection of more relevant variables.		

SHBC 2023 SCIENTIFIC COMPETITION

Finalist

AWARD CATEGORY: Singapore Primary Care Award (Poster)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
PCR-P-03	Family Medicine	Primary Care Research
Authors J.S.QUEK ¹ , E.S.LEE ¹ , J.K.W.LEW ¹ , S.K.W.WONG ¹ ¹ NHG Polyclinics (Singapore)		
Title The complex patient in primary care in Singapore: prevalence and associated factors		
Background & Hypothesis The prevalence of patient complexity in primary care is set to increase. However, local data is lacking. We aim to find out the prevalence of patient complexity in primary care in Singapore, and the factors associated with complexity.		
Methods A patient complexity questionnaire was designed based on previous work. Experienced primary care physicians (PCPs) from six polyclinics completed questionnaire-filling for patients seen over four sessions, classifying them as "Routine Care (RC)", "Medically Challenging but not complex (MC)" or "Complex Care (CC)", and indicating the complexity factors present. Clinical and resource utilisation data were extracted. Comparisons between RC, MC and CC, and a mixed-effects multinomial logistic regression were conducted to identify factors independently associated with CC.		
Results Sixty-nine PCPs assessed the complexity of 4,327 patient encounters. The prevalence of CC was 15.0%, MC 18.5% and RC 66.4%. Independent predictors of complexity included living in 1-2 room housing; requiring assistance for mobility, more issues managed during the encounter; diagnosis of stroke and/or TIA, having a medical-domain issue on the complexity questionnaire like polypharmacy, treatment interactions, poorly-controlled chronic conditions, declining specialist referrals, diagnostic uncertainty or somatisation disorders; or having an issue in the functional, psychological, social, behavioural or resource utilisation domains. Doctor consultation time was also found to be significantly longer in CC and MC encounters.		
Discussion & Conclusion 15.0% of encounters were CC, with another 18.5% deemed MC. Our study identified important characteristics of complex patients in primary care in Singapore that could aid resource allocation and planning.		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Singapore Primary Care Award (Poster)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
PCR-P-04	Family Medicine	Primary Care Research
<p>Authors S.Z.SIM¹, X.N¹, E.S.LEE, S.Y.TAN¹, G.T.Y.DING¹</p> <p>¹NHG Polyclinics (Singapore)</p> <p>Title Understanding the Link between Intrinsic Capacity and Frailty in Singapore's Primary Care Population with Multimorbidity</p> <p>Background & Hypothesis Deficits in intrinsic capacity (DIC), frailty, and multimorbidity are prevalent in older adults, and screening for DIC and frailty has been recommended. We aimed to describe DIC and how it overlaps with frailty in older adults with multimorbidity in the primary care setting.</p> <p>Methods A cross-sectional survey was conducted in three polyclinics from August to October 2022. Participants had multimorbidity (at least hypertension, hyperlipidaemia and diabetes mellitus). Data collected included socio-demographic variables, lifestyle risk factors, level of multimorbidity, IC (WHO Integrated Care for Older People (ICOPE) Screening Tool), and frailty (modified Fried). Descriptive statistics were used to identify the most commonly affected IC domains, the percentage of participants with DIC and their frailty status.</p> <p>Results The study included 411 participants (mean age 69.9 ±6.0 years). Most robust participants (97.5%) had DIC (1.5 domains ±0.71), 97.1% of pre-frail participants had DIC (1.9 domains ±0.84), while all frail participants had DIC (2.4 domains ±1.01). The most commonly affected IC domains in descending order were sensory (90% total, 84% hearing and 46% visual), locomotor (50.7%), cognitive (31.6%), vitality (10.9%) and psychological (10.9%). There was significant overlap between frailty and DIC.</p> <p>Discussion & Conclusion Frailty was associated with higher DIC in older adults with multimorbidity in the primary care population. However, even robust and pre-frail participants had DIC, with the sensory domain most commonly affected. Further studies are required to determine how frailty and IC can complement each other to further risk-stratify those at risk of adverse outcomes for timely interventions.</p>		

SHBC 2023 SCIENTIFIC COMPETITION
Finalist
AWARD CATEGORY: Singapore Primary Care Award (Poster)

Abstract Details		
Finalist ID	Clinical Specialty	Abstract Category
PCR-P-05	Family Medicine	Primary Care Research
<p>Authors E.TAN², D.M.L.TAN², L.S.YEO², J.S.R FOO², X.CHANG², S.B.PANG², P.S.GOH², H.T.LIM², Y.XIE², K.Q.LOW¹, J.X.ZHU</p> <p>¹National Healthcare Group HQ (Singapore), ²NHG Polyclinics (Singapore)</p> <p>Title Retrospective Review of Foot Surveillance Service for Patients with Moderate- to High-Risk Diabetic Foot in Primary Care: a preliminary analysis</p> <p>Background & Hypothesis Foot Surveillance (FS) service was launched at National Healthcare Group Polyclinics in 2017 to manage diabetic patients at moderate or high risk of developing diabetic foot ulcers (DFU). The study aims to elucidate baseline characteristics and explore factors associated with deteriorating foot status.</p> <p>Methods A retrospective cohort study of diabetic patients reviewed at FS from May 2017 to Mar 2022. Data retrieved from FS registry and electronic medical records was analysed using descriptive and binary logistic regression analysis.</p> <p>Results Of the 2274 patients who attended FS, 54% were male and 65% Chinese. Average age was 71(±10) years old, average duration of diabetes 11(±8) years and HbA1c 7.4(±1.4). 30% of patients presented with callus, 27% with loss of protective sensation and 34.9% with foot deformity. Approximately 13% of patients have had one episode of DFU and 8% had one episode of foot/toe amputation. Binary logistic regression analysis (n=866) showed that with increase in age by one year, the risk of foot condition deterioration increases 1.02 times (OR 1.02; 95%CI 1.002–1.037). Patients with history of DFU and with skin fissures were respectively 2.563 times (OR 2.563; 95%CI 1.241–5.292) and 2.072 times (OR 2.072; 95%CI 1.011–4.248) more likely to have foot condition deterioration compared to those without prior DFU and skin fissure.</p> <p>Discussion & Conclusion The factors identified to be associated with foot condition deterioration such as age, history of DFU and skin fissure should be emphasised during foot education to mitigate diabetic foot complications.</p>		