Meng Fanwen

Principal Research Analyst, Health Services & Outcomes Research, NHG PhD in Operations

Research Interests:
- Health Services Research
- Hospital Capacity Planning and Resource Allocation
- Disease Prevention and Treatment using Math Modeling
- Decision Making and Optimisation under Uncertainty

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Biography

Fanwen obtained his PhD in operations research (OR) from National University of Singapore (NUS), Singapore. He is currently principal research analyst at Nation Healthcare Group (NHG). Prior to joining NHG, he worked at NUS and University of Southampton of UK as senior research fellow and post-doc research fellow respectively on problems concerning operations planning and management in deterministic or uncertain environment. He has been appointed as Associate Editor of *Pacific Journal of Optimization* since 2016. He is interested to collaborate with clinicians to tackle clinical problems of interest using mathematical modeling, data science and OR approaches.

Selected Publications

- F. Meng, GY Ang, RRY Chang, CP Lee, KB Tan, JA Abisheganaden. **Cost-effectiveness analysis of continuous positive airway pressure treatment for obstructive sleep apnea in Singapore from a health system perspective.** *Journal of Sleep Research.* 2025; 34: e14326. https://doi.org/10.1111/jsr.14326

- S. Han, J. Goh, FW Meng, MK-S Leow, DB Rubin. **Contrast-specific propensity scores for causal inference with multiple interventions.** *Statistical Methods in Medical Research*. 2024; https://doi.org/10.1177/09622802241236952

- FW Meng, J. Jonklaas, MK Leow. **Interconversion of Plasma Free Thyroxine Values from Assay Platforms with Different Reference Intervals using Linear Transformation Methods**. *Biology*. 2021; 10:45. https://doi.org/10.3390/biology10010045

- FW Meng, A. Tan, BH Heng, MK Leow, P. Kannapiran. **Feasibility Analysis of a Prevention Program for Patients with Early Chronic Disease Using a Mathematical Model**. *Health Systems*, 2021.
  https://doi.org/10.1080/20476965.2020.1860654

- FW Meng, Y. Sun, BH Heng, MK Leow. **Analysis via Markov Decision Process to Evaluate Glycemic Control of a Large Retrospective Cohort with Type 2 Diabetes – the AMELIORATE Study**. *Acta Diabetologica*. 2020; 57:827-834.
  https://doi.org/10.1007/s00592-020-01492-x

- FW Meng, KL Teow, KWS Teo, CK Ooi, SY Tay. **Predicting 72-hour Reattendance in Emergency Departments Using Mixed Integer Programming via Discriminant Analysis with Electronic Medical Records**. *Journal of Industrial and Management Optimization*. 2019; 15:947-962.
  https://doi.org/10.3934/jimo.2018079

- FW Meng, EL Li, PM Yen, MK Leow. **Hyperthyroidism in the Personalized Medicine Era – the Rise of Mathematical Optimization**. *Journal of the Royal Society Interface*. 2019; 16:20190083.
  https://doi.org/10.1098/rsif.2019.0083

- R. Chin, AX You, FW Meng, J. Zhou, K. Sim. **Recognition of Schizophrenia with Combinatorial Regularized Support Vector Machine and Sequential Region of Interest Selection Using Structural Magnetic Resonance Imaging**. *Scientific Reports*. 2018; 8:13858 (Co-first author).
  https://doi.org/10.1038/s41598-018-32290-9

- FW Meng, KL Teow, CK Ooi, CKK Soh, SY Tay. **Shift Capacity Planning for Nursing Staff in Emergency Department Using Mixed Integer Programming**. *Pacific Journal of Optimization*. 2016; 12, 635-648.

- FW Meng, J. Qi, M. Zhang, J. Ang, S. Chu, M. Sim. **A Robust Optimization Model for Managing Elective Admission in a Public Hospital**. *Operations Research*. 2015; 63:1452-1467.
  https://doi.org/10.1287/opre.2015.1423

Notable Research/Innovation Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
National Medical Research Council (NMRC) HSR New Investigator Grant (HSR-NIG)	2015
Top 20 in National Health Tech Challenge	2018
Digital Prototyping Budget funded by Digital & Smart Health Office, TTSH	2023