



Meng Fanwen

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

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 is interested to collaborate with clinicians to tackle clinical problems of interest using mathematical modeling and OR approaches.

Selected Publications

- 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.
- 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.
- 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).
- 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.
- 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.
- 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.
- 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.
- 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.

Notable Research 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