

## Joseph Lo Zhiwen



MBBS, B Med Sci, MMed (Surgery), FRCSEd, FAMS, FACS, FEBVs, PhD (candidate)

Head and Senior Consultant, Vascular Surgery Service,  
Department of Surgery (Woodlands Health)  
Clinician-Scientist (National Healthcare Group)

### Research/Innovation Interests:

- Diabetic Limb Salvage
- Wound Care
- Artificial Intelligence in Healthcare
- Chronic Venous Insufficiency and Iliac Vein Pathology
- Open and Endovascular Renal Dialysis Access

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### Biography

Joseph is Head and Senior Consultant of Vascular Surgery Service at Woodlands Health with clinical and research interests in diabetic limb salvage, wound care, Artificial Intelligence in healthcare, health economics, iliac venous disease and renal vascular access. He is currently the lead of Diabetic Foot in Primary and Tertiary (DEFINITE) Care and co-lead of Wounds iCare Collaborative (WiCC) Clinical and Research Workgroup. To date, he has received more than \$4,500,000 in dedicated research grants, co-authored more than 70 publications, reviewed for 15 journals and is on the editorial board of 5 journals. He had been awarded the Society of Vascular Surgery International Scholars Program in 2020, NMRC Research Training Fellowship in 2021 and National Healthcare Innovation and Productivity Medal (Care Redesign) in 2022. He serves on the board of the Chapter of General Surgeons, College of Surgeons (Singapore) and is currently the Honorary Secretary of the Society for Vascular and Endovascular Surgeons of Singapore.

## Selected Publications

- **ZJ Lo**, WM Tay, Q Lee, et al. Predictors of radio-cephalic arteriovenous fistulae patency in an Asian population. *J Vasc Access*. 2016 Sep 21;17(5):411-416
- **ZJ Lo**, Z Lin, et al. Diabetic Foot Limb Salvage-A Series of 809 Attempts and Predictors for Endovascular Limb Salvage Failure. *Ann Vasc Surg*. 2018 May;49:9-16.
- **ZJ Lo**, X Lim, D Eng, et al. Clinical and economic burden of wound care in the tropics: a 5-year institutional population health review. *Int Wound J*. 2020; 17:790-803
- KS Chan, **ZJ Lo**. Wound assessment, imaging and monitoring systems in diabetic foot ulcers: A systematic review. *Int Wound J*. 2020; 1-15
- **ZJ Lo**, NK Surendra, A Saxena, J Car. Clinical and economic burden of diabetic foot ulcers: A 5-year longitudinal multi-ethnic cohort study from the tropics. *Int Wound J*. 2021; doi:10.1111/iwj.13540
- **ZJ Lo**, S Chandrasekar, E Yong, et al. Clinical and Economic Outcomes of a Multi-Disciplinary Team Approach in a Lower Extremity Amputation Prevention Program for Diabetic Foot Ulcer Care in an Asian Population – A Case-Control Study. *Int Wound J*. 2021; doi:10.1111/iwj.13672
- **ZJ Lo**, E Tan, S Chandrasekar, D Ooi, et al. Diabetic Diabetic Foot in Primary and Tertiary (DEFINITE) Care: a Health Services Innovation in Coordination of Diabetic Foot Ulcer (DFU) Care within a Healthcare Cluster – 18-month Results from an Observational Population Health Cohort Study. *Int Wound J*. 2022. Doi:10.1111/iwj.14016
- **ZJ Lo**, B Chong, E Tan, D Ooi, H Liew, WH Hoi, YT Cho, K Wu, NK Surendra, M Mammadova, A Nah, V Goh, J Car. Patients, carers and health care professionals' perspectives on a patient-owned surveillance system for diabetic foot ulcer care: A Qualitative Study. *Digital Health*. 2023. 9:1-15
- **ZJ Lo**, KB Harish, E Tan, J Zhu, S Chan, H Liew, WH Hoi, S Liang, YT Cho, HY Koo, K Wu, J Car. A feasibility study on the efficacy of a patient-owned wound surveillance system for diabetic foot ulcer care (ePOWS study). *Digital Health*. 2023; 9:1-9
- **ZJ Lo**, MHW Mak, S Liang, YM Chan, CC Goh, T Lai, A Tan, P Thng, J Rodriguez, T Weyde, S Smit. Development of an explainable artificial intelligence model for Asian vascular wound images. *Int Wound J*. 2023; doi:10.1111/iwj.14565

### Notable Research/Innovation Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
A*STAR-Skin Research Institute of Singapore and Konica-Minolta for “Clinical Validation and Development of WoundAide”	2019
Collaboration with Tetsuyu for “Clinical Validation of C4W Imaging System”	2019
A*STAR-Skin Research Institute of Singapore for “Wound Care Innovations in Tropics National Wound Registry” (H17/01/a/0/0Y9)	2019
A*STAR-Skin Research Institute of Singapore for “Lower Extremity Amputation Prevention Program (LEAPP) Collaboration” (H17/01/a/0/OPP9)	2019
Collaboration with Urgo Medical for “Evaluation of the efficacy and safety of a sequential treatment protocol in the management of venous leg ulcers”	2020
NHG Population Health Grant (PHG20/S/X/1/1) with KTPH, NHGP for “Diabetic Foot in Primary and Tertiary (DEFINITE) Care”	2020
Skin Innovation Grant with eKare funding and Skin Research Institute of Singapore (SIG2002) funding for “Pilot study on efficacy of patient-owned wound surveillance system for diabetic foot ulcer care (ePOWS Study)”	2020
National Research Medical Council (NMRC) Research Training Fellowship (RTF) for “Evaluating and Decreasing the Socio-Economical Burden of Wound Care in Singapore through Health Systems Innovations and Health Literacy” (FLWSHP19nov-0015)	2021
Collaboration with AITI Solutions (spin-off from Delta Capita Limited) for “Clinical Validation of Artificial Intelligence Image Analysis on Asian Wound Images”	2021
Woodlands Health Small Projects Utilising Teams (SPROUTS) grant for “Patient Reported Experience Measures (PREMs) in patients with Diabetic Foot Ulcers”	2022
CMTi Medtech Grant for “Developing a Smartphone-based Automated Diabetic Foot Screening Solution (Project eDFS)” (CMTi-23-01-01)	2023
NHG Enhanced Population Health Fund for “Diabetic Foot in Primary and Tertiary (DEFINITE) Upstream” (EPHF-C/2023/POC/M/6)	2023
NHG Enhanced Population Health Fund for “Diabetic Foot in Primary and Tertiary (DEFINITE) Extend” (EPHF-C/2024/POV/M/9)	2024

## Translating Research/Innovation Into Healthcare

2018:

- A\*STAR prototypes 3D printer for wounds. *Channel News Asia*. Published 8 September 2018. <https://www.channelnewsasia.com/news/videos/a-star-prototypes-3d-printer-for-wounds-video-10695938>

2020:

- Five-year review of Singapore primary care system demonstrates rising impact of chronic wounds. *iWounds News*. Published 20 March 2020. <https://iwoundsnews.com/five-year-review-singapore-rising-impact-chronic-wounds/>
- Clinical Validation and Improvement of WoundAide Imaging System. *NHG e-Catalyst*. Published Nov-Dec 2020. [https://www.research.nhg.com.sg/wps/wcm/connect/49652d0040f223fb8780f70c9e9c42b6/eCatalyst\\_42.pdf?MOD=AJPERES](https://www.research.nhg.com.sg/wps/wcm/connect/49652d0040f223fb8780f70c9e9c42b6/eCatalyst_42.pdf?MOD=AJPERES)

2021:

- Rate of amputation drastically reduced for more than 2,700 patients with diabetes who participated in the foot care programme (DEFINITE Care Program). *Lianhe Zaobao*. Published 1 October 2021. <https://www.zaobao.com.sg/news/singapore/story20211002-1199251>
- NHG launches new program to reduce diabetes-related amputations (DEFINITE Care Program). *8world*. Published 1 October 2021. <https://www.8world.com/singapore/nhg-diabetes-foot-care-1605371>
- NHG programme for diabetic foot disease reduces major amputations by 40 per cent (DEFINITE Care Program). *The Straits Times*. Published 7 October 2021. <https://www.straitstimes.com/singapore/health/nhg-programme-for-diabetic-foot-disease-reduces-major-amputations-by-40-per-cent>
- 40 per cent reduction in amputation cases for patients with diabetes (DEFINITE Care Program). *Berita Harian*. Published 7 October 2021. <https://www.beritaharian.sg/setempat/kes-amputasi-bagi-pesakit-kencing-manis-kurang-40>
- Putting a “DEFINITE” Foot Forward. 2020/2021 NHG Corporate Yearbook : Population Health. <https://corp.nhg.com.sg/Documents/CYB%202021%20Digital/population-health.html>

2022:

- Graduate Students News: SG Healthcare AI Datathon 2021 Award  
[https://ebook.ntu.edu.sg/lkmedicine-strides\\_jan2022.html](https://ebook.ntu.edu.sg/lkmedicine-strides_jan2022.html)
- Charing Cross Symposium Daily News 18 April 2022:  
Researchers develop predictive model for risk of amputation in diabetic foot patients
- Not a Marathon and Not a Hackathon, but a Datathon!
- NHG Wounds iCare Collaborative (WiCC) Research and Clinical Workgroup
- Singapore Wound Registry – A Collaboration Between Skin Research Institute of Singapore, SingHealth, National University Health System and National Healthcare Group  
<https://www.research.nhg.com.sg/wps/wcm/connect/df6a0113-27a5-4e14-8b6d-c9c34dc9ff9c/eCatalyst+Issue+45+Newsletter.pdf?MOD=AJPERES&CVID=o3IP3mE&CVID=o3IP3mE&CVID=o3IP3mE&CVID=o3IP3mE>

2023:

- Woodlands Health Yearbook 2022/2023
  - Honing our delivery of care – INSPIRE Congress 2022: Holistic Management of Diabetic Foot Disease @ Woodlands Health
  - Driving Innovation and Research  
[https://www.wh.com.sg/AboutUs/Documents/WH\\_Corp\\_Yearbook\\_FY22.pdf](https://www.wh.com.sg/AboutUs/Documents/WH_Corp_Yearbook_FY22.pdf)
- WORDS Newsletter Issue 1, June 2023
  - Spotlight on Clinician-Scientist  
[https://www.dropbox.com/sc/fi/hooqz7g5yzm3mvovaft77/ForWORDS-Newsletter\\_June-2023.pdf?rlkey=prgt7mrgttlanhcot7sv2v7fg&dl=0](https://www.dropbox.com/sc/fi/hooqz7g5yzm3mvovaft77/ForWORDS-Newsletter_June-2023.pdf?rlkey=prgt7mrgttlanhcot7sv2v7fg&dl=0)
- Diabetic Foot Online
  - Embracing Home Digital Surveillance: A Step Forward in DFU Care?  
<https://diabeticfootonline.com/2023/10/15/embracing-home-digital-surveillance-a-step-forward-in-diabetic-foot-ulcer-care/>

2024 :

- Diabetic Foot Online
  - David G Armstrong Honored as Distinguished Visiting Professor in Singapore for Limb Preservation  
<https://diabeticfootonline.com/2024/02/02/david-g-armstrong-honored-as-distinguished-visiting-professor-in-singapore-for-limb-preservation-actagainstamputation/>
- Diabetic Foot Online
  - A Closer Look at DFU Treatment Adherence using WHO criteria  
<https://diabeticfootonline.com/2024/02/07/a-closer-look-at-diabetic-foot-ulcer-treatment-adherence-using-who-criteria-ijlew-actagainstamputation-diabeticfoot/>