

Weisi Chen

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Brief Biography

I am a health data analyst/biostatistician specializing in the analysis of large and complex datasets, with expertise in data mining, visualization, and statistical modeling. I have contributed to research across the fields of biostatistics, clinical epidemiology, and pharmacoepidemiology. With a prior background in pharmacy, I bring a unique combination of domain knowledge and analytical expertise to health data research, enabling me to uncover meaningful insights that inform evidence-based decision-making.

Over the years, I have worked extensively with large, linked administrative health datasets, developing a strong understanding of data integration, quality assurance, and population-level analysis. My work often involves transforming raw, complex data into actionable insights that support health policy and research initiatives.

Technical Skills & Expertise

SAS · R · R Shiny · Tableau · Power BI · GitHub

Big Data Management · Reproducible Research · Data Visualization · Statistical Analysis · Data Storytelling · Dashboard Development

Education

Sept 2021 - Mar 2023 The University of New South Wales

M.S. Health Data Science

WAM: 88% (Dissertation: 91%)

Dissertation: Changes in atherosclerotic cardiovascular disease risk over time among people living with HIV

Mar 2015 - Mar 2019 The University of Sydney

B.S. Pharmacy

Employment History

Research-focused Positions

July 2023 - Dec 2023; Data Scientist / Research Officer, Sydney Pharmacy School, The University of Sydney
April 2025 - Present

Lead analyst on national studies using large-scale linked health data to map multimorbidity clusters and high-risk prescribing in older Australians. Experienced in study design, statistical analysis, cohort development, and translating complex data into actionable research outputs.

- **Lead analyst, Nationwide study mapping multimorbidity disease clusters in older Australians** using large-scale national linked health administrative datasets. Responsibilities included conducting literature reviews, designing study methods, performing analyses, and developing advanced visualizations. Outputs included drafting the manuscript as first author and preparing conference abstracts and presentations.
- **Lead analyst, Multi-Agency Data Integration Project (MADIP)** investigating high-risk prescribing patterns in older adults with dementia using linked PBS and Census data. Responsibilities included literature review, study design, descriptive analyses, and logistic regression modelling. Outputs included contributing to manuscripts, conference abstracts, and presentations.
- **Developed a comprehensive national dementia cohort** integrating hospital admissions, ED presentations, PBS, MBS, aged care, and death registrations to support future studies.
- **Collaborated with investigators, research partners, and stakeholders** to ensure timely project delivery.

July 2023 - Mar 2025 Data Scientist / Research Officer, School of Population Health, The University of New South Wales

Lead analyst experienced in managing and analyzing large, linked health and social datasets, generating insights through statistical analysis and visualizations. Skilled in ethics and data governance, manuscript preparation, and collaborating with Aboriginal communities to ensure culturally appropriate research.

- **Lead analyst, Aboriginal Community Controlled Ear Health Support System (ACCESS) project.** Responsibilities included conducting literature reviews, drafting data management and analysis plans with research teams, preparing analysis-ready datasets from linked sources, and performing statistical analyses including descriptive statistics and visualizations to examine ear health patterns among Aboriginal children over time. Contributed to manuscripts, conference abstracts, and presentations.
- **Lead analyst, Evaluation of Sustaining NSW Families (NSW Health) project.** Responsibilities included conducting literature reviews, drafting and implementing data management and analysis plans for linked datasets, and performing analyses using target trial emulation with inverse probability of treatment weighting. Contributed to manuscripts, conference abstracts, and presentations.
- **Assisted in building a large-scale linked data platform integrating multiple datasets for NSW Child E-Cohort Project:**
 - Perinatal Data Collection, Birth Registrations, Hospital Separations, and ED Presentations
 - Australian Early Development Census, Public School Enrolments, and NAPLAN
 - Child Protection Reports, Out-of-Home Care Placements, Justice (Youth & Adult Corrections), Public Housing, and Death Registrations
- **Supported project governance and ensured culturally appropriate program delivery through effective coordination, communication, and reporting activities.** Drafted ethics and data access applications, contributed to ongoing reporting to committees and data custodians, and maintained regular communication with project investigators and Aboriginal community organizations to ensure culturally appropriate program delivery.

Clinical-focused Positions

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| Mar 2021 - Dec 2023 | Pharmacist in Charge (FTE 0.2), Bondi Junction Pharmacy, Sydney, NSW |
| Mar 2021 - Dec 2023 | Pharmacist on Duty (FTE 0.4), Blooms the Chemist, Bondi Junction, Sydney, NSW |
| Mar 2020 - Sept 2020 | Registered Pharmacist, Chemist Warehouse, Double Bay, Sydney, NSW |
| Dec 2018 - Mar 2020 | Graduate Intern Pharmacist, Chemist Warehouse, Randwick, Sydney, NSW |

Key Responsibilities:

- Dispensed medications safely using pharmacy software; reviewed patient histories.
- Counseled patients on prescriptions, OTC medications, and medical devices.
- Supervised and mentored pharmacy students and technicians.
- Prepared blister packs for elderly patients to optimize adherence.
- Performed blood pressure tests, provided counseling, and referred patients as needed.
- Collaborated with healthcare professionals to optimize patient outcomes.
- Reported adverse drug events (ADEs) and medication errors per regulations.

Research Interests

I am interested in pharmacoepidemiology and in advancing my expertise in statistical and analytical methods using large, linked health administrative datasets.

Publications

[Google Scholar Profile](#)

A. Peer-reviewed Journal Articles

1. Le, H. T., Lau, E. C. Y., **Chen, W.**, Lu, C. Y., Nguyen, T. A., Low, L.-F., Hilmer, S. N., Jeon, Y.-H., & Tan, E. C. K. (2025) "Prevalence and Risk Factors for Psychotropic Medication Use in Older Adults in Australia: A Nationwide Data Linkage Study" *Drugs & Aging*. 42(7):755–769. DOI: [10.1007/s40266-025-01220-6](https://doi.org/10.1007/s40266-025-01220-6)
2. Huynh, A. L. H., Wang, Y., Ma, L., Low, Y. C. L., **Chen, W.**, Fowler, C., Tan, E. C. K., Masters, C. L., Jin, L., Pan, Y., & the AIBL Research Group. (2024) "A comparison of an Australian observational longitudinal Alzheimer's Disease cohort to Community-Based Australian data." *Journal of Alzheimer S Disease*. 1–13. DOI: [10.3233/JAD-240241](https://doi.org/10.3233/JAD-240241)
3. Lau, E. C. Y., **Chen, W.**, Lu, C. Y., Hilmer, S. N., Jeon, Y.-H., & Tan, E. C. K. (2024) "Antidementia and psychotropic drug use in older people with dementia in Australia: a national data linkage study" *Journal of the American Medical Directors Association*. 25 (11), 105237. DOI: [10.1016/j.jamda.2024.105237](https://doi.org/10.1016/j.jamda.2024.105237)
4. **Chen, W.**, Petoumenos, K., Somia, A., Edmiston, N., Chaiwarith, R., Woolley, I., Ross, J., Pujari, S., & Boettiger, D. C (2024) "Changes in atherosclerotic cardiovascular disease risk over time among people living with HIV" *Journal of Antimicrobial Chemotherapy*. 79(4), 897–902. DOI: [10.1093/jac/dkac049](https://doi.org/10.1093/jac/dkac049)

B. Working Papers

1. Falster, K., Pilkington, R., **Chen, W.**, Hanly, M., Montgomerie, A., Ahmed, T., Powell, M., Lingam, R., Cretikos, M., Newton, B., Thomson, C., Katz, I., & Lynch, J. (2024) "A sustained nurse home visiting program and child outcomes: a target trial emulation in Australia, 2018–2021" *Working paper*.
2. Falster, K., Pilkington, R., **Chen, W.**, Hanly, M., Montgomerie, A., Ahmed, T., Powell, M., Lingam, R., Cretikos, M., Newton, B., Thomson, C., Katz, I., & Lynch, J. (2024) "Characteristics of enrolment in a sustained nurse home visiting program among eligible mothers and families in Australia: a data linkage study, 2010–2021" *Working paper*.
3. Lau, E. C. Y., **Chen, W.**, Hilmer, S. N., Jeon, Y.-H., Lu, C. Y., Fujita, K., Wang & Tan, E. C. K. (2025) "High-risk geriatric prescribing in older people with and without dementia in Australia: a nationwide cross-sectional study" *Accepted in Journal of the American Medical Directors Association*.
4. **CHEN, W.**, Lu, C. Y., Hilmer, S. N., Gibson, A., Nassar, N., & Tan E. C. K (2025) "Multimorbidity clusters in the older Australian population: a nationwide cross-sectional data linkage study" *Working paper*.

C. Working Reports

1. Falster, K., **Chen, W.**, Hanly, M., Ahmed, T., Powell, M., Pilkington, R., Montgomerie, A., & Lynch, J. (2024) "Sustaining NSW Families Program Outcome evaluation technical report" *Working report prepared for NSW Health*.

D. Contributed Presentations

1. "Mapping multimorbidity clusters in older Australians using linked administrative health data", Tan, E. C. K (Presenter)., **Chen, W.**, Lu, C. Y., & Hilmer, S.. ASCEPT conference. Sydney. Dec 10, 2025.
2. "Emulation of a target trial of the Sustaining NSW Families Program versus usual care among an eligible population born 2018-2021: An evaluation of program outcomes using linked district and whole-population data", Falster, K (Presenter)., Pilkington, R., Lynch, J., **Chen, W.**, Hanly, M., Montgomerie A., Powell, M., & Ahmed T.. SNF Evaluation Advisory Committee. Sydney. Feb 13, 2025.
3. "Prevalence and risk factors for psychotropic medication dispensing in Australian older adults.", Le, T. H (Presenter)., Lau, E. C. Y., **Chen, W.**, Lu, C. Y., Nguyen, T. A., Low, L.-F., Hilmer, S. N., Jeon, Y.-H., & Tan, E. C. K.. ASCEPT conference. Sydney. Dec 01, 2024.
4. "Myringotomy tube (grommet) insertion procedures in a whole-population cohort of NSW Aboriginal children (birth-years 2002-2018), followed from 0 to age 2-18 years", Falster K (Presenter)., **Chen, W.**, Ahmed, T., Hanly, M., Gunasekera, H., DeLacy, J., Newman, J., Wright, D., Bailey, S., Banks, E., Craig, J., Teixeira-Pinto, A., Dickson, M., Kong, K., Howard, K., Purcell, A., Cutmore, M., Fernando P., Lingam, R., Douglas, M., Rattos, S., Woolfenden, S., & Sherwood J.. ACCESS Investigator meeting. Orange. Nov 20, 2024.
5. "Myringotomy tube (grommet) insertion procedures in a whole-population cohort of NSW Aboriginal children (birth-years 2002-2018), followed from 0 to age 2-18 years", Falster K (Presenter)., **Chen, W.**, Ahmed, T., & Hanly, M.. ACCESS Investigator meeting. Sydney. Feb 28, 2024.
6. "Factors associated with antipsychotic use in people with dementia in Australia.", Lau, E. C. Y (Presenter)., **Chen, W.**, Lu, C. Y., & Tan, E. C. K.. ASCEPT conference. Sydney. Nov 20, 2023.