

BIOGRAPHICAL SKETCH

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NAME: Lin, Pei-Jung

eRA COMMONS USER NAME (credential, e.g., agency login): PLIN144

POSITION TITLE: Associate Professor of Medicine

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
National Taiwan University, Taipei, Taiwan	BS	06/2001	Public Health
Harvard School of Public health, Boston, MA, USA	MS	06/2004	Health Policy and Management
University of North Carolina at Chapel Hill, Chapel Hill, NC, USA	PhD	05/2008	Health Policy and Management
University of Maryland, Baltimore, MD, USA	Postdoctoral Fellow	07/2009	Pharmacoeconomics

A. Personal Statement

My research interests center on health care policy, health economics and outcomes research, and cost-effectiveness analysis. The core of my work involves analyzing the value of health care and assessing quality of care, patient outcomes, and health care costs among vulnerable populations with chronic conditions. A major focus of my research is to evaluate the health and economic impacts of Alzheimer's disease (AD), which affects women disproportionately. I serve on the Advisory Panel of Women's Health Access Matters (WHAM!), a non-profit organization dedicated to increasing awareness of women's health issues and implementing strategies that will address bias in research and accelerate scientific discovery in women's health (WHAMNOW.org). My current R01 grant funded by the NIH investigates racial and ethnic health disparities in dementia care. I was awarded Alzheimer's Association New Investigator Research Grant to examine readmissions and preventable hospitalizations among AD patients. In prior work, I have examined Medicare and Medicaid expenditures of AD, modeled potential health and economic impacts of addressing risk factors of AD, and estimated AD progression rates using patient registry data from the National Alzheimer's Coordinating Centers. Since 2015 I have served as an Associate Editor for *Alzheimer's & Dementia: The Journal of The Alzheimer's Association*. I am an Executive Committee Member of the Health Policy Personal Interest Area of the Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART). I am also a member of an Alzheimer's Association Working Group to develop Best Clinical Practice Guidelines for AD evaluation and diagnosis. I have extensive experience mentoring students, research fellows, and junior researchers. I have served as a primary preceptor for all post-doctoral fellows at the Center for the Evaluation of Value and Risk in Health at Tufts Medical Center since 2012. My long-standing collaboration with Dr. Freund and the other faculty members at Tufts University School of Medicine/Tufts Medical Center further strengthens this application.

1. **Lin PJ**, Cohen JT, Neumann PJ. Preparing the health-care system to pay for new Alzheimer's drugs. *Alzheimers Dement*. 2020 Aug 18. PubMed PMID: [32808733](#).
2. **Lin PJ**, Emerson J, Faul JD, Cohen JT, Neumann PJ, Fillit HM, Daly AT, Margaretos N, Freund KM. Racial and Ethnic Differences in Knowledge About One's Dementia Status. *J Am Geriatr Soc*. 2020 Aug;68(8):1763-1770. PubMed PMID: [32282058](#).

3. **Lin PJ**, D'Cruz B, Leech AA, Neumann PJ, Sanon Aigbogun M, Oberdhan D, Lavelle TA. Family and Caregiver Spillover Effects in Cost-Utility Analyses of Alzheimer's Disease Interventions. *Pharmacoeconomics*. 2019 Apr;37(4):597-608. PubMed PMID: [30903567](#).
4. **Lin PJ**, Zhong Y, Fillit HM, Chen E, Neumann PJ. Medicare Expenditures of Individuals with Alzheimer's Disease and Related Dementias or Mild Cognitive Impairment Before and After Diagnosis. *J Am Geriatr Soc*. 2016 Aug;64(8):1549-57. PubMed PMID: [27295430](#).

B. Positions and Honors

Positions and Employment

- 2006 - 2008 Pre-doctoral Fellow in Global Health Outcomes, UNC-CH and GlaxoSmithKline, Research Triangle Park, NC
- 2008 - 2009 Post-doctoral Fellow in Pharmacoeconomics, University of Maryland School of Pharmacy, Baltimore, MD
- 2009 - Project Director, Tufts Medical Center, Boston, MA
- 2010 - 2017 Assistant Professor, Tufts University School of Medicine, Boston, MA
- 2017 - Associate Professor, Tufts University School of Medicine, Boston, MA

Other Experience and Professional Memberships

- 2015 - Associate Editor, *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*
- 2015 - Executive Committee Member, International Society for Pharmacoeconomics and Outcomes Research, Boston Chapter
- 2015 - Steering Committee Member, The International PharmacoEconomic Conference on Alzheimer's Disease (IPECAD)
- 2019 - Executive Committee Member, Health Policy Personal Interest Area, Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment
- 2020 - Advisory Panel Member, Women's Health Access Matters (WHAM!)

Honors

- 2010 Natalie V. Zucker Research Grant, Tufts University/Tufts Medical Center
- 2011 Earl P. Charlton Fund Research Award, Tufts University School of Medicine
- 2014 - 2016 New Investigator Research Grant, Alzheimer's Association

C. Contributions to Science

1. The economics of Alzheimer's disease (AD) and mild cognitive impairment (MCI): In prior work, I have analyzed AD/MCI health care costs in the period surrounding a new diagnosis. These findings highlight the importance of early diagnosis and the need to coordinate transitions across care settings for newly diagnosed patients. Additionally, I have examined the performance of different risk adjustment and case-mix measures to predict AD costs. This analysis has significant policy implications, providing indications of how cost predictions may be improved for individuals with substantial disabilities and comorbidities, and whether disincentives to enroll high-risk populations may be influenced by capitation methods.
 - a. Jönsson L, **Lin PJ**, Khachaturian AS. Special topic section on health economics and public policy of Alzheimer's disease. *Alzheimers Dement*. 2017 Mar;13(3):201-204. PubMed PMID: [28232007](#).
 - b. **Lin PJ**, Zhong Y, Fillit HM, Chen E, Neumann PJ. Medicare Expenditures of Individuals with Alzheimer's Disease and Related Dementias or Mild Cognitive Impairment Before and After Diagnosis. *J Am Geriatr Soc*. 2016 Aug;64(8):1549-57. PubMed PMID: [27295430](#).
 - c. **Lin PJ**, Neumann PJ. The economics of mild cognitive impairment. *Alzheimers Dement*. 2013 Jan;9(1):58-62. PubMed PMID: [23141385](#).
 - d. **Lin PJ**, Maciejewski ML, Paul JE, Biddle AK. Risk adjustment for Medicare beneficiaries with Alzheimer's disease and related dementias. *Am J Manag Care*. 2010 Mar;16(3):191-8. PubMed PMID: [20225914](#).

2. Health outcomes studies in AD: Managing comorbidities has been a long-standing challenge in the care of AD patients. I have examined the effects of comorbidities on care quality (as measured by potentially avoidable hospitalizations) and health care costs in the AD population. These findings highlight the need for complex care management to better manage multiple chronic comorbidities among high-risk AD patients. In prior research, I have examined case finding of AD in secondary data, by identifying patients via ICD-9 diagnosis codes, anti-dementia medication use, and self-reported knowledge of AD. These comparisons found great differences in case finding if a single data source was used. In addition, it is well-known that individuals with AD incur higher health expenditures than those without. My modeling study showed that addressing modifiable risk factors, such as cardiovascular diseases, hypertension, diabetes, and BMI, could lessen the chances of developing AD, delay its onset, and shorten the disease duration. By increasing the amount of time that older adults lived without AD, managing risk factors could produce "unintended benefits" of lowering disease costs.
 - a. **Lin PJ**, Zhong Y, Fillit HM, Cohen JT, Neumann PJ. Hospitalizations for ambulatory care sensitive conditions and unplanned readmissions among Medicare beneficiaries with Alzheimer's disease. *Alzheimers Dement*. 2017 Sep 5. PubMed PMID: [28886338](#).
 - b. **Lin PJ**, Yang Z, Fillit HM, Cohen JT, Neumann PJ. Unintended benefits: the potential economic impact of addressing risk factors to prevent Alzheimer's disease. *Health Aff (Millwood)*. 2014 Apr;33(4):547-54. PubMed PMID: [24711313](#).
 - c. Borson S, Frank L, Bayley PJ, Boustani M, Dean M, **Lin PJ**, McCarten JR, Morris JC, Salmon DP, Schmitt FA, Stefanacci RG, Mendiondo MS, Peschin S, Hall EJ, Fillit H, Ashford JW. Improving dementia care: the role of screening and detection of cognitive impairment. *Alzheimers Dement*. 2013 Mar;9(2):151-9. PubMed PMID: [23375564](#).
 - d. **Lin PJ**, Kaufer DI, Maciejewski ML, Ganguly R, Paul JE, Biddle AK. An examination of Alzheimer's disease case definitions using Medicare claims and survey data. *Alzheimers Dement*. 2010 Jul;6(4):334-41. PubMed PMID: [20434960](#).
3. Value of cancer care: The costs of new treatments for cancer have provoked debate. I have led and collaborated on several SEER-Medicare projects to investigate the value of cancer care. In these studies, my colleagues and I investigated both the costs and benefits of innovative treatments in hematologic malignancies. One study estimated trends in health care costs and survival of older patients with chronic myeloid leukemia. This study is the first to our knowledge to examine the value of health care spending for chronic myeloid leukemia in the U.S. since the emergence of expensive but effective new therapies. In a systematic review, we found that, although many of these blood cancer treatments are associated with high costs, they also provide large benefits. Based on our analysis of the available literature, many treatments for blood cancers appear to be cost-effective according to commonly used standards.
 - a. **Lin PJ**, Winn AN, Parsons SK, Neumann PJ, Weiss ES, Cohen JT. Linking Costs and Survival in the Treatment of Older Adults With Chronic Myeloid Leukemia: An Analysis of SEER-Medicare Data From 1995 to 2007. *Med Care*. 2016 Apr;54(4):380-5. PubMed PMID: [26759984](#).
 - b. Shah GL, Winn A, **Lin PJ**, Klein A, Sprague KA, Smith HP, Buchsbaum R, Cohen JT, Miller KB, Comenzo R, Parsons SK. Cost Implications of Comorbidity for Autologous Stem Cell Transplantation in Elderly Patients with Multiple Myeloma Using SEER-Medicare. *Bone Marrow Res*. 2016;2016:3645623. PubMed PMID: [27830092](#); PubMed Central PMCID: [PMC5088316](#).
 - c. Winn AN, Shah GL, Cohen JT, **Lin PJ**, Parsons SK. The real world effectiveness of hematopoietic transplant among elderly individuals with multiple myeloma. *J Natl Cancer Inst*. 2015 Aug;107(8) PubMed PMID: [26023094](#); PubMed Central PMCID: [PMC4554189](#).
 - d. Saret CJ, Winn AN, Shah G, Parsons SK, **Lin PJ**, Cohen JT, Neumann PJ. Value of innovation in hematologic malignancies: a systematic review of published cost-effectiveness analyses. *Blood*. 2015 Mar 19;125(12):1866-9. PubMed PMID: [25655601](#); PubMed Central PMCID: [PMC4366623](#).
4. Understanding patient preferences for care: In a population-based survey, we document that the way a doctor frames survival statistics can make a big difference in how the patient perceives the value of the therapy. This empirical analysis provides unique data on how alternative methods of expressing survival benefits may influence preferences for cancer care. Another study focuses on how people value diagnostic

testing-- one of the fastest growing areas of health care and an important cost driver in the U.S. Our study analyzed what people would be willing to pay for diagnostic tests, and how preferences for test information may vary by factors such as the condition being evaluated or the diagnostic modality. Our latest work on preferences for test information suggests that most people would prefer testing their newborn for a rare but serious genetic disorder, Spinal Muscular Atrophy, and express a reasonably high willingness to pay for the test, even in the absence of direct treatment.

- a. **Lin PJ**, Yeh WS, Neumann PJ. Willingness to Pay for a Newborn Screening Test for Spinal Muscular Atrophy. *Pediatr Neurol.* 2017 Jan;66:69-75. PubMed PMID: [27769729](#).
- b. **Lin PJ**, Saret CJ, Neumann PJ, Sandberg EA, Cohen JT. Assessing the Value of Treatment to Address Various Symptoms Associated with Multiple Sclerosis: Results from a Contingent Valuation Study. *Pharmacoeconomics.* 2016 Dec;34(12):1255-1265. PubMed PMID: [27461538](#).
- c. **Lin PJ**, Concannon TW, Greenberg D, Cohen JT, Rossi G, Hille J, Auerbach HR, Fang CH, Nadler ES, Neumann PJ. Does framing of cancer survival affect perceived value of care? A willingness-to-pay survey of US residents. *Expert Rev Pharmacoecon Outcomes Res.* 2013 Aug;13(4):513-22. PubMed PMID: [23977977](#).
- d. **Lin PJ**, Cangelosi MJ, Lee DW, Neumann PJ. Willingness to pay for diagnostic technologies: a review of the contingent valuation literature. *Value Health.* 2013 Jul-Aug;16(5):797-805. PubMed PMID: [23947973](#).

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/pei-jung.lin.1/bibliography/public/>

D. Research Support

Ongoing Research Support

R01AG060165, NIH/NIA Lin (PI) 09/15/2018-03/31/2023

Assessing Diagnosis and Treatment Delays and Health Care Disparities by Race/Ethnicity among Individuals with Alzheimer's Disease and Related Dementias

This study characterizes racial and ethnic disparities in Alzheimer's Disease and Related Dementias (ADRD) diagnosis and management, from the early to end-of-life stages of the disease, using survey data from the Health and Retirements Study linked with Medicare/Medicaid claims. Our findings will provide empirical, population-based evidence identifying types of care that should be scrutinized for the purpose of reducing racial/ethnic disparities in ADRD.

Role: Principal Investigator

Contract, Janssen Global Services Ollendorf (PI) 11/01/2019-12/31/2021

Appraisal of the Inter-Country Transferability of Approaches to Value Assessment

This project will conduct a comprehensive review of the healthcare and HTA environment in selected countries and assess the feasibility of transferring value assessment.

Role: Co-Investigator

Contract, Genentech Lin (PI) 11/13/2019-01/12/2021

When Are Breakthrough Therapies Cost-Effective?

This study aims to better understand the value of breakthrough therapies. We will conduct a literature review to summarize the cost-effectiveness of these agents, as measured by the cost-per-quality-adjusted-life-year (QALY) metric. We will investigate factors associated with the reported value of breakthrough therapies, such as whether the drug is first-in-class. In addition, we will examine cost-effectiveness thresholds cited in the cost-utility analyses (CUAs).

Role: Principal Investigator

Contract, GlaxoSmithKline (GSK) Lin (PI) 10/01/2019-09/30/2021

CEVR Postdoctoral Fellowship Program

This two-year fellowship program will train a qualified candidate in the methodologies in health economic evaluation, outcomes research, decision sciences, and health policy analysis. The training program provides an excellent opportunity for the fellow to gain unique and in-depth applied work experience in health and economic outcomes studies. The overall goal of the fellowship program is to help prepare the fellow for careers in pharmaceutical industry, academic, or consulting settings.

Role: PI/Program Director

Completed Research Support (within past 3 years)

Grant #AARG-17-533543, Alzheimer's Association Lin (PI) 11/01/2017-10/31/2020

Racial and Ethnic Disparities in ADRD Diagnosis, Treatment and Costs

This pilot study examined racial and ethnic disparities in the diagnosis and treatment of ADRD and the resulting total health care expenditures using survey data.

Role: Principal Investigator

Contract, Amgen Lin (PI) 12/01/2017-02/28/2020

Patient Characteristics and Treatment Patterns of PCSK-9 Inhibitors among Medicare Beneficiaries

The objective of this retrospective analysis was to analyze demographic and clinical characteristics of Medicare beneficiaries initiating PCSK9i during the first 1.5 years of market availability.

Role: Principal Investigator

Contract, Bluebird Bio Neumann (PI) 01/14/2019-05/31/2019

Lifetime Costs and QALY Gains with Gene Therapies

Role: Co-Investigator

Contract, Amgen Lin (PI) 12/15/2017-05/31/2018

Incorporating Core Outcome Sets in Alternate Payment Models

This literature review aimed to understand current practices for incorporating Core Outcome Sets in alternate payment models in oncology and suggest key considerations for the design of future payment models.

Role: Principal Investigator

Contract #20161553-TSK3, Otsuka Lin (PI) 08/08/2016-01/31/2018

Incorporating family spillover effects into cost-effectiveness analyses in Alzheimer's disease: Review of practices and magnitude of benefits

To conduct a review of the cost-effective analysis (CEA) literature related to dementia and Alzheimer's disease to investigate how family spillover effects are incorporated into published CEA studies, and the impact that family cost and health effects have on the perceived value of interventions when they are considered.

Role: Principal Investigator