NATHANIEL HENDRIX

January 2022

Harvard T.H. Chan School of Public Health
665 Huntington Ave 1-1104
Boston, Massachusetts 02115

https://nathanielhendrix.com/
nhendrix@hsph.harvard.edu
(206) 474-6784

ACADEMIC POSITIONS

Harvard University, T.H. Chan School of Public Health
Postdoctoral Research Fellow, 2020 – Present

University of Washington, The Comparative Health Outcomes, Policy & Economics Institute
Research and Teaching Assistant, 2016 – 2020

EDUCATION

Ph.D. Health Economics and Outcomes Research, University of Washington, 2020.

Dissertation Title: "Using Health Economics Tools to Enhance the Clinical Utility of Artificial Intelligence-Based Diagnostics: A Case Study in Breast Cancer Screening"

Committee: David L. Veenstra (chair), Aasthaa Bansal, Brett Hauber, Christoph I. Lee

Pharm.D., University of Washington, 2015.

B.A. English Literature, Texas State University, 2004.

RESEARCH INTERESTS

Health Economics, Health Equity, Clinical Artificial Intelligence, Cancer Screening

PEER-REVIEWED PUBLICATIONS

** indicates co-first author*

1. **N. Hendrix**, X. Jiang Kwete, S. Bolongaita, I. Megiddo, S.T. Memirie, A. Mirkuzie, J. Nonvignon, and S. Verguet (2022). "Economic evaluations of health system strengthening activities in low- and middle-income countries: A methodological systematic review." In press at *BMJ Global Health*.
2. S. Jiang, P. Mathias, **N. Hendrix**, D.L. Veenstra, and B. Devine (2022). "Customizing value-based methods to prioritize implementation of pharmacogenomic clinical decision support for learning health systems: A cost-utility analysis." In press at *The Pharmacogenomics Journal*.
3. L.F. Assebe, D. Dillu, K.A. Johansson, M.T. Tolla, G. Tiru, S. Bolongaita, A. Chakrabarti, and **N. Hendrix** (2021). "Financial risks of care-seeking for malaria by rural households in southwest Ethiopia." *BMJ Open*, 11(e056162). doi: 10.1136/bmjopen-2021-056162
4. **N. Hendrix**, D.L. Veenstra, M. Cheng, N.C. Anderson, and S. Verguet (2021). "Assessing the economic value of clinical artificial intelligence: Challenges and opportunities." *Value in Health*, online before print. doi.org/10.1016/j.jval.2021.08.015
5. **N. Hendrix**, R. Gulati, B. Jiao, A.K. Kader, S.T. Ryan, and R. Etzioni (2021). "Clarifying the trade-offs of risk-stratified screening for prostate cancer: A cost-effectiveness study." *American Journal of Epidemiology*, 190(10). doi:10.1093/aje/kwab155
6. B. Jiao, R. Gulati, **N. Hendrix**, J.L. Gore, S. Rais-Bahrami, T.M. Morgan, and R. Etzioni (2021). "Modeling the cost-effectiveness of multi-parametric magnetic resonance imaging and urine-based reflex testing before prostate biopsy in men with intermediate prostate-specific antigen levels." *Value in Health*, 24(8). doi:10.1016/j.jval.2021.02.009

7. **N. Hendrix**, D.D. Kim, K.S. Patel, and B. Devine (2021). "Differences in the selection of health state utility values by sponsorship in published cost-effectiveness analyses." *Medical Decision Making*, 41(3). doi:10.1177/0272989X20985821

8. **N. Hendrix**, B. Hauber, C.I. Lee, A. Bansal, and D.L. Veenstra (2020). "Artificial intelligence in breast cancer screening: Primary care provider preferences." *Journal of the American Medical Informatics Association*, 28(6). doi:10.1093/jamia/ocaa292

9. **N. Hendrix**, Z. Marcum, and D.L. Veenstra (2020). "Medication persistence of targeted immunomodulators for plaque psoriasis: A retrospective analysis of a US claims database." *Pharmacoepidemiology & Drug Safety*, 29(6). doi:10.1002/pds.5021

10. **N. Hendrix**, D.A. Regier, A. Basu, D.L. Veenstra, J. Chatterjee, D.S. Dhanda, and J.J. Carlson (2020). "Provider preferences for resolving uncertainty and avoiding harms in precision medicine: Results from a discrete choice experiment." *Personalized Medicine*, 17(5). doi:10.2217/pme-2020-0018

11. R. Baral, J. Fleming, S. Khan, D. Higgins, **N. Hendrix**, and C. Pecenka (2020). "Inferring antenatal care visit timing in low- and middle-income countries: Methods to inform potential maternal vaccine coverage." *PLOS One*, 15(8). doi:10.1371/journal.pone.0237718

12. F. Debellut, **N. Hendrix**, V.E. Pitzer, K.M. Neuzil, D. Constenla, N. Bar-Zeev, A. Marfin, and C. Pecenka (2019). "Forecasting demand for the typhoid conjugate vaccine in low- and middle-income countries." *Clinical Infectious Diseases*, 68(S2). doi:10.1093/cid/ciy1076

13. **N. Hendrix**, D.A. Ollendorf, R.H. Chapman, A. Loos, S. Liu, V. Kumar, J.A. Linder, S.D. Pearson, and D.L. Veenstra (2018). "Cost-effectiveness of targeted pharmacotherapy for moderate to severe plaque psoriasis." *Journal of Managed Care & Specialty Pharmacy*, 24(12). doi:10.18553/jmcp.2018.24.12.1210

14. J.J. Carlson, D.D. Kim, G.F. Guzauskas, C.S. Bennette, D.L. Veenstra, A. Basu, **N. Hendrix**, D.L. Hershman, L. Baker and S.D. Ramsey (2018). "Integrating value of research into NCI Clinical Trials Cooperative Group research review and prioritization: A pilot study." *Cancer Medicine*, 7(9). doi:10.1002/cam4.1657

15. F. Debellut*, **N. Hendrix***, J.R. Ortiz, P. Lambach, K.M. Neuzil, N. Bhat, and C. Pecenka (2018). "Forecasting demand for maternal influenza immunization in low- and lower-middle-income countries." *PLOS One*, 13(6). doi:10.1371/journal.pone.0199470

16. W.J. Canestaro, **N. Hendrix**, A. Bansal, S.D. Sullivan, B. Devine, and J.J. Carlson (2017). "Favorable and publicly-funded studies are more likely to be published: A systematic review and meta-analysis." *Journal of Clinical Epidemiology*, 92. doi:10.1016/j.jclinepi.2017.08.004

17. **N. Hendrix**, N. Bar-Zeev, D. Atherly, J. Chikafa, H. Mvula, R. Wachepa, A. Crampin, T. Mhango, C. Mwansambo, R. Heyderman, N. French, N. Cunliffe, and C. Pecenka (2017). "The economic impact of childhood acute gastritis on Malawian families and the healthcare system: A prospective cohort study." *BMJ Open*, 7(9). doi:10.1136/bmjopen-2017-017347

18. P.C. Mathias, **N. Hendrix**, W.-J. Wang, K. Keyloun, M. Khelifi, P. Tarczy-Hornoch, and B. Devine (2017). "Characterizing pharmacogenomic-guided medication use with a clinical data repository." *Clinical Pharmacology & Therapeutics*, 102(2). doi:10.1002/cpt.611

MANUSCRIPTS UNDER REVIEW

1. **N. Hendrix***, K.P. Lowry*, J.G. Elmore, W. Lotter, A.G. Sorensen, W. Hsu, G.J. Liao, S. Parsian, S. Kolb, A. Naeim, and C.I. Lee. "Radiologist preferences for the implementation of artificial intelligence-based decision support for detection and risk prediction during interpretation of screening mammography."

2. **N. Hendrix**, S. Bolongaita, S.T. Memirie, M.T. Tolla, D. Villano, and S. Verguet. "Equitable prioritization of healthcare interventions by weighting outcomes on financial risk protection criteria."

3. **N. Hendrix**, A. Bansal, D.S.M. Buist, C.I. Lee, and D.L. Veenstra. "Outcomes modeling for evaluation of artificial intelligence-based tools for mammography interpretation: A comparative study."

GRANTS AND SPONSORED PROJECTS

Completed Grants

1. Pre-Doctoral Fellowship (Developing Data-Driven Cancer Researchers, PIs: R. Etzioni and S. Schwartz)
   Role on Project: Pre-Doctoral Trainee
   Funder: National Institutes of Health (National Cancer Institute)
   Project Period: September 2018 – July 2020
   Project Identifier: 5T32CA009168-42
2. Pre-Doctoral Fellowship in Outcomes Research
   Role on Project: Pre-Doctoral Trainee
   Funder: PhRMA Foundation
   Project Period: July 2018 – December 2019
   Description: Funds provided for cost-of-living support during my Ph.D. dissertation.
3. Pre-Doctoral Fellowship (Health Services Research Training, PI: D. Grembowski)
   Role on Project: Pre-Doctoral Trainee
   Funder: Agency for Healthcare Research and Quality
   Project Period: September 2015 – August 2017
   Project Identifier: 5T32HS013853-17

INVITED PRESENTATIONS

1. "Radiologist Preferences for AI-Based Decision Support during Breast Cancer Screening." University of Washington, Program in Health Economics and Outcomes Research (PHEnOM), Seattle, 2021.
2. "Cost-Effectiveness Analysis to Support the Equitable Implementation of Clinical Artificial Intelligence." Harvard University Center for Research for Computation and Society Health Equity Panel, online (due to COVID-19), 2021.
3. "Cost-Effectiveness of Risk-Stratified Screening for Prostate Cancer." Cancer Intervention and Surveillance Modeling Network (CISNET) Annual Meeting, online (due to COVID-19), 2020.

SELECTED PRESENTATIONS

1. **N. Hendrix**, B. Hauber, C.I. Lee, A. Bansal, and D.L. Veenstra (2020). "Provider preferences for attributes of artificial intelligence in breast cancer screening: A discrete choice experiment." ASCO Annual Meeting, online (due to COVID-19).
2. **N. Hendrix**, Z. Marcum, and D.L. Veenstra (2019). "Drug survival of targeted therapies for plaque psoriasis: Evidence from a large U.S. claims database." International Conference on Pharmacoepidemiology & Therapeutic Risk Management (ICPE), Philadelphia, Pennsylvania.
3. **N. Hendrix**, B. Adamson, A. Basu, and B. Devine (2018). "Increasing trend toward reporting significant digits in utility weights: Behavior implications of 'flat of the curve' medicine?" ISPOR Annual Meeting, Baltimore, Maryland.
4. **N. Hendrix**, D.A. Ollendorf, R. Chapman, A. Loos, S. Liu, V. Kumar, J. Linder, S. Pearson, and D.L. Veenstra (2017). "Cost-effectiveness of targeted therapy for moderate-to-severe plaque psoriasis: an analysis based on Institute for Clinical and Economic Review (ICER) report." ISPOR Annual Meeting, Boston, Massachusetts.
5. **N. Hendrix**, and B. Devine (2016). "Deriving utility weights from patient-reported outcomes in epilepsy." ISPOR Annual Meeting, Washington, DC.

6. **N. Hendrix**, C. Pecenka, J. Chifaka, R. Wachepa, H. Mvula, R. Heyderman, N. French, N. Cunliffe, N. Bar-Zeev, and D. Atherly (2016). "Household costs for treatment of rotavirus-associated diarrheal disease in Malawi." Twelfth International Rotavirus Symposium, Melbourne, Australia.
7. **N. Hendrix**, C. Pecenka, and C. Keech (2015). "Methods for estimating the global impact of an RSV vaccine." RSV Vaccines for the World, La Jolla, California.

TEACHING

Harvard University

Guest lecture: "Visualizing results of cost-effectiveness analyses using R and ggplot2." Harvard T.H. Chan School of Public Health, GHP 501 (Modeling for Health System Analysis & Priority Setting: graduate level course with approximately 25 enrolled students), 2021.

University of Washington

Curriculum developer and instructor of MarketScan Summer Bootcamp (an introduction to claims data for 10 entering graduate students), 2019.

Approximately 18 hours of lecture and office hours covering basic SAS, SQL and R programming; data subsetting and cleaning; patient identification; and descriptive statistics

Teaching assistant for PHARM 541 (Pharmacy, Healthcare, and Society), 2018.

Developed and graded exercises on reimbursement in the healthcare system and basic ideas in the economic evaluation of medicines for a class of approximately 90 PharmD students

HONORS & AWARDS

Rubenstein Scholarship Fund ($5,000), University of Washington School of Pharmacy, 2020.

Rubenstein Scholarship Fund ($4,000), University of Washington School of Pharmacy, 2019.

Graduate Student Leadership Award, University of Washington School of Pharmacy, 2019.

SERVICE TO PROFESSION, UNIVERSITY & DEPARTMENT

Editorial Service

Abstract reviewer, American Medical Informatics Association Annual Symposium, 2021.

Referee for *Applied Health Economics*, *BMC Health Services Research*, *BMJ Global Health*, *BMJ Open*, *ClinicoEconomics and Outcomes Research*, *European Journal of Health Economics*, *Journal of Biomedical Informatics*, *Journal of Managed Care and Specialty Pharmacy*, *Journal of Urology*, *Pharmacoepidemiology & Drug Safety*, *PLOS One*, *Value in Health*, and *Value in Health Regional Issues*

University of Washington, The Comparative Health Economics, Outcomes & Policy (CHOICE) Institute

Member, Strategic Planning Committee, 2019.

Founder and lead student editor, *Incremental Thoughts: The CHOICE Institute's Student Blog*, 2018-2019.

Member, Ph.D. Admissions Committee, 2018.

PROGRAMMING LANGUAGES

R, Python, VBA, SQL