John W. Robinson, M.D., Ph.D.

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Health Care Consulting and Services
Statistics • Analytics • Data Science

Profile

- Design and analyze studies of effectiveness and outcomes of clinical treatments and health services interventions.
- Deliver innovative solutions for deriving meaningful, actionable information from large-scale digital data sources.
- Provide basic and advanced statistical programming and analysis.
- Doctoral degrees in medicine, biostatistics, and health services research.
- Former corporate medical director in managed care and practicing physician.

Professional Experience

Principal Consultant (2020 – present)
William E. Wecker Associates, Inc., Jackson, WY

Consultant (1998 – present)
John W. Robinson, M.D., Ph.D., LLC, Jackson, WY; Chevy Chase, MD
Selected accomplishments:

- Created and taught for 6 years a 24-hour lecture series for Johns Hopkins University faculty, fellows, and research staff on designing randomized and observational comparative effectiveness studies, including studies that involve survival analysis, longitudinal analysis, multilevel (hierarchical) models, cost-effectiveness analysis, and propensity score methods.
- Completed longitudinal analyses of the effectiveness of a skin care device and a topical treatment using generalized estimating equations and linear mixed models, programmed in R, for a consumer products company.
- Created a Markov chain Monte Carlo method (Gibbs sampler), programmed in SAS Interactive Matrix Language (IML) and SAS Macro Language, that fits a multilevel (hierarchical) multivariate model for analysis of health care providers' effects on multiple related outcomes (i.e., multivariate provider profiling).
- Created a machine learning program for predictive modeling of patients' health care costs based on ICD diagnoses and demographic data, via stochastic gradient boosting (boosted regression trees), coded in SAS Interactive Matrix Language (IML) and SAS Macro Language.
- Developed a longitudinal model, fitted using generalized estimating equations (GEE), for predicting monthly health care cost for patients with heart failure enrolled in a disease management program.
- Created a procedure for multivariate analysis of healthcare operations efficiency using data envelopment analysis models, optimized via linear programming written in R language, with an interactive graphical output interface.
- Designed and developed protocols for evaluating the integrity and validity of large-scale electronic health records and claims databases, using SQL (Microsoft and Amazon cloud), SAS, and R language programming.
- Created a procedure for extracting selected data elements directly from electronic data interchange (EDI) health care claims into a relational database, using SQL and C language programming.
- Designed and developed procedures for transforming administrative data coded in terms of ICD, CPT, HCPCS, LOINC, and national drug codes into measures of appropriate care of diabetes, hypertension, heart disease, chronic kidney disease, COPD, and asthma, consistent with established clinical practice guidelines.

Professional Experience (continued)	• Devised and completed a capabilities assessment and gap analysis of the corporate analytics department of a mid-sized managed care organization, including reporting, prediction and research capabilities and interfaces with information systems, clinical, quality and financial departments. • Devised, researched, and authored a complete set of evidence-based guidelines for care management and evaluation of treatment appropriateness for common behavioral health disorders. • Conducted on-site assessments of health plan quality as a Physician Surveyor for the National Committee for Quality Assurance (NCQA).

Corporate Medical Director / Vice President (1995 – 1998)
CMG Health Inc., Owings Mills, MD; a managed care organization (sold in 1998)
• Responsible for oversight of Utilization Management, Quality Improvement, Provider Networks and Credentialing; 40 employees in the corporate office.
• Set policy and developed procedures for utilization management and quality improvement in regional care management centers, nationwide.

Postdoctoral Fellow in Health Services Research (1991 – 1994)
Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD

Private Practice of Psychiatry (1985 – 1995)
Denver, CO; Baltimore, MD; Chevy Chase, MD

Education

Ph.D. in Biostatistics (2005)
Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD
• Dissertation: A Hierarchical Multivariate Two-Part Model for Profiling Providers' Effects on Healthcare Charges

Ph.D. in Health Services Research (1996)
Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD
• Dissertation: Patient Disclosure and Physician Management of Psychosocial Problems in Primary Care

Doctor of Medicine (1980)
University of California, Los Angeles

Bachelor of Arts with a Major in Biochemistry (1976)
University of California, Berkeley

Post-Graduate Medical Training

Resident in Psychiatry (1981– 1985)
University of Colorado, Denver, CO

Intern in Internal Medicine (1980 – 1981)
Emanuel Hospital, Portland, OR

Certification and Licenses

Diplomat in Psychiatry (1987 – present)
American Board of Psychiatry and Neurology

Licenses to Practice Medicine
Colorado (1981 – 1991), **Maryland** (1991 – present)

Awards	**Individual National Research Service Award** (1993 – 1994) **U.S. Public Health Service**, sponsored by Johns Hopkins University **Institutional National Research Service Award** (1991 – 1993) **U.S. Public Health Service**, sponsored by Johns Hopkins University

Selected Publications	- Robinson JW. Propensity score models in observational comparative effectiveness studies: cornerstone of design or statistical afterthought? *Journal of Comparative Effectiveness Research* 2012;1(2):129-35. - Robinson JW. Regression tree boosting to adjust health care cost predictions for diagnostic mix. *Health Services Research* 2008;43(2):755-72. - Robinson JW, Zeger SL, Forrest CB. A hierarchical multivariate two-part model for profiling providers' effects on health care charges. *Journal of the American Statistical Association* 2006:101;911-23. - Robinson JW, Roter DL. Counseling by primary care physicians of patients who disclose psychosocial problems. *Journal of Family Practice* 1999:48(9);698-705. - Robinson JW, Roter DL. Psychosocial problem disclosure by primary care patients. *Social Science & Medicine* 1999:48(10);1353-62.