

VILIJIA R. JOYCE

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Versatile and experienced leader and data scientist in the healthcare space. Using real-world data coupled with data analysis and statistical modeling, I help organizations evaluate the efficiency of programs and interventions to improve health outcomes.

EDUCATION

MS, Health Services Research - STANFORD UNIVERSITY

Sep 2006

Advisor: Douglas K. Owens, MD, MS

BA, International Area Economics/Health Policy – UNIVERSITY OF CALIFORNIA, LOS ANGELES

Mar 2001

Advisors: Trudy Ann Cameron, Ph.D. and Carlos A. Végh, Ph.D.

WORK EXPERIENCE

VA Health Economics Resource Center (HERC), Menlo Park, CA

Jul 2002 - Present

DEPARTMENT OF VETERANS AFFAIRS

Associate Director (Jan 2021-Present) | Research Associate (Sep 2006-Present) | Research Assistant (Jul 2002-Sep 2006)

Select accomplishments, by study or center. Code written in SAS, SQL, or R, unless indicated otherwise.

HERC Core

- Offered strategic leadership to HERC's Director and developed Center research goals and initiatives.
- Provided Center operational support re: budget, purchases, as well as managing personnel issues including staff allocation, mentoring, conflict resolution, and hiring.
- Organized 2023 HERC Retreat to create connections among virtual staff, promote team building, and a healthy organizational culture.
- Co-chaired Inclusion Workgroup and co-wrote/awarded grant to bring specialized Diversity, Equity, and Inclusion training to center.
- Developed presentations and built agendas for weekly administrative team meetings, monthly staff meetings, and Expert and Stakeholders Forums.
- Restructured HERC's website architecture. Built a SQL database and wrote ASP, HTML, CSS, and SQL code to construct a custom content management system to manage HERC's website. Collaborated with internal and external staff on website usability studies, needs assessments, and ongoing website updates in compliance with VA directives.

Program Evaluation and Resource Center (PERC), Office of Mental Health and Suicide Prevention (OMHSP)

- Assisted with creation and implementation of a national Power BI dashboard, supporting self-harm reduction strategies for injection drug users (IDU), to improve health care operations across mental health programs.
 - Developed IDU strategy using structured data and information extracted from patient notes using a natural language processing (NLP) pipeline.

IIR 17-139, Cost effectiveness of interventions to reduce morbidity from opioid dependency

- Built analytic dataset for cost of overdose analysis, including monthly cost, Elixhauser comorbidities, RIOSORD score, and average total daily morphine milligram equivalents.
- Generated survival analysis in R and visualized survival curves using Kaplan-Meier plots (ggsurvplot/ggplot2).
- Co-authored manuscript in *JAMA Psychiatry* (in press).
- Submitted and was awarded ~\$35k in funding for supplementary curation of a phenotype to identify pharmacotherapy for OUD.
- Served as project manager: literature reviews, budget needs, weekly call coordination and agenda building, IRB, privacy, and applications to access secure datasets.
- Managed study launch: drafted just-in-time documentation, IRB/RDIS protocols, VINCI DART protocol, WOC paperwork, budgets and cost transfers, and hired personnel.

Women's Health Services/Women's Health Evaluation Initiative/IIR 14-099, Pregnancy Outcomes of Veterans (PROVE)

- Built primary pregnancy episodes dataset using lab LOINCs, DRGs, ICD-10 diagnoses and procedures, and CPT codes for use by WHS/WHEI.
- Built and documented series of utilization datasets from VA and community care (VA-paid) files.

- Wrote code to generate logistic regression and GEE models to test associations between PTSD and preterm birth.
- Wrote code to generate descriptive statistics, weighted Kappa statistics, and a longitudinal linear mixed effects model to assess predictors of differences in BMI classification.
- Co-authored 2 papers published in *Health Services Research* and *Obesity Science & Practice*.
- Managed regulatory compliance, including CA state and VA IRB, privacy, and applications to access secure datasets.

IIR 11-045, Management of HIV as a Chronic Disease

- Partnered with Stanford University's Quantitative Sciences Unit and wrote R code to evaluate different methods for handling missing data. Wrote SAS code to implement statistical models, including multiple imputation of missing values, extended Cox models with time varying co-variables, and marginal structural models.
- Co-authored 2 papers in *Statistics in Medicine* and *Clinical Infectious Diseases*.
- Managed regulatory compliance, including IRB and privacy.

CSP 512, Options in Management with Antiretrovirals (OPTIMA)

- Built datasets from clinical trial data and wrote SAS and STATA code to generate ordinary least squares models as well as two-part regression, beta regression, and finite mixture models to map the EQ-5D-3L or HUI3 onto the MOS-HIV (quality of life scores).
- Built analytic dataset from clinical trial data and wrote code to run a longitudinal linear mixed-effects model to test for differences in quality of life between randomized treatment groups.
- Authored/co-authored 8 papers in various journals including *Journal of Acquired Immune Deficiency Syndromes* and *Medical Decision Making*.
- Managed regulatory compliance, including IRB and privacy.

SELECTED PEER-REVIEWED PUBLICATIONS

1. **Joyce VR**, Oliva EM, Garcia CC, Trafton J, Asch SM, Wagner TH, Humphreys K, Owens DK, Bounthavong M. Healthcare costs and utilization before and after opioid overdose in patients with opioid use disorder. Accepted at *Addiction* 2023.
2. McElfresh D, Chen L, Oliva EM, **Joyce VR**, Rose S, Tamang S. A Call for Better Validation of Opioid Overdose Risk Algorithms. Accepted at *Journal of the American Medical Informatics Association* 2023.
3. Fairley M, Humphreys K, **Joyce VR**, Bounthavong M, Trafton J, Combs A, Oliva EM, Goldhaber-Fiebert JD, Asch SM, Brandeau ML, Owens DK. Cost-Effectiveness of Treatments for Opioid Use Disorder: A Model-Based Analysis. *JAMA Psychiatry* 2021; 78(7):767-777.
4. Desai M, **Joyce V**, Bendavid E, Olshen RA, Hlatky M, Chow A, Barnett P, Owens DK. Risk of Cardiovascular Events Associated with Current Exposure to HIV Antiretroviral Therapies in a US Veteran Population. *Clin Infect Dis* 2015; 61(3):445-452.
5. **Joyce VR**, Smith MW, Johansen KL, Unruh ML, Siroka AM, O'Connor TZ, Palevsky PM. Health-Related Quality of Life as a Predictor of Mortality Among Survivors of Acute Kidney Injury. *Clin J Am Soc Nephrol* 2012; 7(7):1063-1070.
6. **Joyce VR**, Barnett PG, Chow A, Bayoumi AM, Griffin SC, Sun H, Holodniy M, Brown ST, Kyriakides TC, Cameron DW, Youle M, Sculpher M, Anis AH, Owens DK. Effect of treatment interruption and intensification of antiretroviral therapy on health-related quality of life in patients with advanced HIV: A randomized, controlled trial. *Med Decis Making* 2012; 32(1):70-82.

SELECTED PRESENTATIONS

- "Healthcare costs and utilization before and after opioid overdose in patients with opioid use disorder," February 10, 2023 at the HSR&D/QUERI National Conference, Baltimore, MD [oral presentation].
- "VA Laboratory Data", October 2015-2022 for the VA Data Bootcamp, Menlo Park, CA [oral presentation].
- "Cost Data: Three Lessons from a Study on Hepatitis C Treatments and their Budgetary Impact", April 28, 2017 at Academy Health's Health Datapalooza, Washington, DC [oral presentation, panel member, booth volunteer].

PROFESSIONAL TRAINING

Machine Learning A-Z: Python & R in Data Science
Udemy, Online

Jan 2023

Microsoft Power BI Desktop for Business Intelligence
Udemy, Online

Dec 2022