

BIOGRAPHICAL SKETCH

NAME: Sox-Harris, Alex

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

POSITION TITLE: Associate Professor, Research Career Scientist

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)	Completi on Date MM/YYYY Y	FIELD OF STUDY
Alaska Pacific University, Anchorage AK	BA	06/1995	Psychology
Alaska Pacific University, Anchorage AK	MS	06/1997	Counseling Psychology
Stanford University, Stanford CA	MS	06/2001	Statistics
Stanford University, Stanford CA	PhD	01/2004	Counseling Psychology
HSR&D Center for Health Care Evaluation, Menlo Park, CA	Post-doc	12/2004	Health Services Research

A. Personal Statement

I am a Research Career Scientist at the VA Center for Innovation to Implementation (Ci2i) at VA Palo Alto and Associate Professor (Research) at the Stanford-Surgery Policy Improvement Research and Education (S-SPIRE) Center in the Stanford Department of Surgery. I am a health services researcher and applied statistician with programs of research focused on predictive model development and implementation, quality measures, and improvement science. I have a record of successful federal grant applications (15 grants as PI, 18 as co-investigator), publishing in scientific journals (>200 manuscripts), and mentoring early career and other perioperative researchers

- a. **Harris**, AHS, Kuo, A, Nordin, D, Bowe, T, Gupta, S, Giori, NG (2018). Prediction Models for 30-Day Mortality and Complications Following Total Knee and Hip Arthroplasty for Veteran Health Administration Patients with Osteoarthritis. *Journal of Arthroplasty*, 33(5), 1539-1545. PMID: 29398261.
- b. **Harris**, AHS (2017). The Path from Predictive Analytics to Improved Patient Outcomes: A Framework to Guide Use, Implementation, and Evaluation of Accurate Surgical Predictive Models. *Annals of Surgery*, 265, 461-463 PMID: 27735825.
- c. **Harris** AHS, Kuo AC, Weng Y, Trickey AW, Bowe T, Giori, NG (2019). Can Machine Learning Methods Produce Accurate and Easy to Use Prediction Models of 30-day Complications and Mortality After Knee or Hip Arthroplasty. *Clinical Orthopaedics & Related Research*. 477(2):452-460.

- d. Giori, NJ, Amanatullah, DF, Gupta, S, Bowe, T, **Harris**, AHS (2018). Risk Reduction versus Access to Care: Quantifying the Trade-off of Enforcing a BMI Eligibility Criterion for Joint Replacement. *Journal of Bone and Joint Surgery*, 100:539-545.

B. Positions and Honors

Positions and Employment

- 2004- Core Investigator, VA HSR&D Center for Innovation to Implementation (formerly Center for Health Care Evaluation)
2014- Research Career Scientist, VA HSR&D
2016- Associate Professor (research), Department of Surgery, Stanford University School of Medicine

Other Experience and Professional Memberships

- 2013-15 American Society of Addiction Medicine (ASAM), Addiction Specialist Physician Performance Expert Panel for the Practice Improvement and Performance Measurement Action Group
2016 American Academy of Orthopedic Surgery – American Society for Surgery of the Hand Carpal Tunnel Quality Measures Workgroup.
2017- AcademyHealth Surgery and Perioperative Special Interest Group
2017 - VA HSR&D Scientific Merit Review Board, Learning Healthcare Initiative Panel (HSR9)
2017- VA HSR&D Scientific Merit Review Board, Opioid and Pain Management Panel (HSR7)

Honors

- 1997-2000 Stanford Presidential Graduate Fellowship
2005 VA HSR&D Post-Doctoral Poster Competition: Award for Highest Scientific Merit
2009 Presidential Early Career Award in Science and Engineering (PECASE)
2010 Outstanding Researcher Award, American Psychological Association, Div. 18, VA Section
2015 VA HSR&D Health System Impact Award

C. Contributions to Science

URL for full list of published work:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1RopsRhjYrSQg/bibliography/47758876/public/?sort=date&direction=ascending>

1. **Surgical Health Services Research:** As faculty in the new S-SPIRE Center in the Stanford University Department of Surgery, I have built a program of surgical and orthopedic health services research, which the current proposal naturally extends. We are currently running a VA HSR&D-funded project to develop and validate risk and benefit predictive models for total joint replacement, and to use these models in clinical pathways to improve the quality of shared decision making and surgical outcomes for VA patients who are candidates for joint replacement. We currently have another VA-funded project to describe, understand, and develop strategies to reduce low value preoperative testing for low risk procedures. The project proposed here extends our efforts to inform and rationalize preoperative processes and decisions.

- a. **Harris**, A.H.S., Reeder, R., Ellerbe, L., Bradley, K.A., Rubinsky, A.D., Giori, N.J. (2011). Preoperative alcohol screening scores: association with complications in men undergoing total joint arthroplasty. *Journal of Bone and Joint Surgery*, 93(4), 321-327. PMID: 21325583
b. **Harris** AHS, Kuo AC, Bozic KJ, Lau E, Bowe T, Gupta S, Giori, NG (2018). American Joint Replacement Registry Risk Calculator Does Not Predict 90-day Mortality in Veterans

Undergoing Total Joint Replacement. *Clinical Orthopaedics & Related Research*, 476, 1869-1865. Published Ahead-of-Print. doi: 10.1097/CORR.0000000000000377

- c. **Harris** AHS, Meerwijk EL, Kamal RN, Sears ED, Curtin, CM, Hawn M, Eisenberg D, Marshall N, Finlay AF, Hagedorn HJ, Mudumbai S. (2019). Variation in Surgeons' Requests for General Anesthesia when Scheduling Carpal Tunnel Release. *Hand*. Feb 21:1558944719828006. doi: 10.1177/1558944719828006.
- d. **Harris** AHS, Meerwijk EL, Kamal RN, Sears ED, Hawn M, Eisenberg D, Finlay AF, Hagedorn HJ, Mudumbai S. (in press). Variability and Costs of Low Value Preoperative Testing for Carpal Tunnel Release Surgery. *Anesthesia and Analgesia*.
- e.

2. Treatment Quality Measurement and Management: My first VA HSR&D grant involved developing and validating quality measures for SUD services in the VHA and other healthcare systems. This work was focused on the predictive validity of existing SUD quality measures – the extent to which the assumed associations between processes and outcomes exist. We found that extant quality measures were, at best, weakly related to patients' substance use outcomes. These results generated wide interest and debate in the SUD field and contributed to the methodological literature by increasing awareness of the ecological fallacy as it pertains to quality measure validation and interpretation. Overall, this work changed the landscape of addiction treatment quality measurement within VA and beyond, and was recognized in my receipt of a Presidential Early Career Award in Science and Engineering (PECASE). A follow-up project has produced evidence of the specification and predictive validity for the 11 SUD metrics in the VA Mental Health Information System. These results are already being used to emphasize certain metrics with good validity properties, and to omit or modify other metrics.

- a. Harris, A.H.S., Kivlahan, D., Bowe, T., Finney, J.W., Humphreys, K. (2009). Developing and validating process measures of health care quality: an application to alcohol use disorder treatment. *Medical Care*, 47(12), 1244-1250. PMID: 19786908
- b. Finney, J.W., Humphreys, K., Kivlahan, D.R., Harris, A.H.S. (2011). Why health care process performance measures can have different relationships to outcomes for patients and hospitals: understanding the ecological fallacy. *American Journal of Public Health*, 101(9),1635 -1642. PMID: PMC3154212
- c. Harris, AHS, Chen, C, Rubinsky, AD, Hoggatt, KJ, Neuman, M, Vanneman, ME (2016). Are Improvements in Measured Performance Driven by Better Treatment or "Denominator Management." *Journal of General Internal Medicine*, 31 Suppl 1:21-7.
- d. Harris, AHS, Rubinsky, AD, Hoggatt, K (2015). Possible Alternatives to Diagnosis-based Denominators for Addiction Treatment Quality Measures. *Journal of Substance Abuse Treatment*, 58, 62-66.

3. Implementation Research: I have an active program of implementation research, primarily focused on improving the quality of addiction and surgical treatment.

- a. Williams EC, Matson TE, **Harris** AHS. (2019) Strategies to Increase Implementation of Pharmacotherapy for Alcohol Use Disorders: A Structured Review of Care Delivery and Implementation Interventions. *Addiction Science & Clinical Practice*. Feb 12;14(1):6
- b. Hagedorn, H, Brown, R, Dawes, M, Dieperink, E, Myrick, D, Oliva, E, Wagner, T, Wisdom, J, **Harris**, AHS (2016). Enhancing access to alcohol use disorder pharmacotherapy and treatment in primary care settings: ADAPT-PC. *Implementation Science*. 11: 64
- c. **Harris** AHS, Brown R, Dawes M, Dieperink E, Myrick DH, Gerould H, Wagner TH, Wisdom JP, Hagedorn HJ, (2017). Effects of a Multifaceted Implementation Intervention to Increase Utilization of Pharmacological Treatments for Alcohol Use Disorders in the US Veterans Health Administration. *Journal of Substance Abuse Treatment*, 82:107-112. PMID: 29021108

- d. Ducharme, LJ, Chandler, RK, **Harris**, AHS (in press). Implementing Substance Abuse Treatment in General Medical Settings: Mapping the Research Terrain. Journal of Substance Abuse Treatment.

D. Research Support Ongoing Research Support (partial)

RCS-14-232 (PI)VA HSR&D 10/2014 -09/2024

Title: HSR&D Research Career Scientist Award

Aims: Conduct high-quality health services research of high relevance to veterans

Role: PI

IIR 16-216 VA HSR&D Sox-Harris/Mudumbai (Co-PI) 01/01/18-12/31/20

Choosing Wisely: Barriers to De-Implementation, Patterns, and Costs of Low Value Preoperative Testing for Veterans Undergoing Low Risk Procedures

Purpose: Same

Role: Co-PI

VA HSR&D Merit Review - IIR 13-051-3 Sox-Harris (PI) 1/1/15-12/31/19

Development and Validation of a Risk Calculator for Total Joint Replacement

Role: Co-Investigator

Dr. Giori and I conceived of and wrote this grant that is currently using national VA patient data sources to develop and validate a risk calculator for total joint replacement. Also as a part of this work, we are leading a multi-center prospective cohort observational study where we are collecting patient reported outcomes on 1200 total joint replacement patients from prior to surgery to one year following surgery. With these data, we are creating a “benefit” calculator. Risk and benefit calculators could then be combined to form a decision making tool for surgeons who are faced with an osteoarthritic patient who has multiple comorbidities.

IIR 15-436-2 VA HSR&D Hoggatt (PI) 03/01/17-03/01/20

Using Data Integration and Predictive Analytics to Improve Diagnosis-Based Performance Measures

The goal is this study is to produce more valid denominators for diagnosis-based quality measures.

Role: Co-Investigator

Completed Research Support (partial)

R01 AT008404-01 NICAM Larson (PI) 08/01/14-03/01/18

Longitudinal Study of Post-Deployment CAM Pain Management using DoD & VA Data

The goal of this study is to assess the prevalence of chronic pain and the use of complementary and alternative medicine (CAM) to treat chronic pain for post-deployment Active Duty and Reserve Component Army members.

Role: Co-Investigator

R21 DA041489-01A1) NIDA Finlay(PI) 02/01/2017 – 02/01/2019

Title: Improving Access to Pharmacotherapy for Opioid Use Disorder Among Justice Involved Veterans

The Goal of this study is to develop strategies to improve uptake of medication treatments for OUD.

Role: Co-Investigator

Stanford-Intermountain Health Collaborative Grant Sox-Harris (Co-PI) 10/01/17-09/30/18

Setting a Foundation for Collaborative Surgical Health Services Research at Stanford Health Care, Intermountain Healthcare, and the Veterans Health Administration

Purpose: This is a one-year grant to pilot test the methods proposed in this study.

Role: Co-PI

I21 HX002413-01A1 VA HSR&D Giori (PI) 03/18 – 2/19

Title: Early Identification of Poorly Performing Joint Replacements: A Pilot study to Determine Basic Prosthetic Implantation and Explantation Information from the VA CDW

Aims: To develop and pilot test a feasible and automatic surveillance system for joint implants

Role: Co-Investigator

SDP 11-411 QUERI Hagedorn/Sox-Harris (PIs) 03/14-03/17

A Multi-Faceted Intervention to Improve Access to Pharmacological Treatments for Alcohol Dependence

The goal of this study is to test a novel implementation strategy to improve access to pharmacotherapy for AUD.

Role: Co-PI

IIR10-370-2 VA HSR&D Sox-Harris (PI) 01/12-12/14

Improving the Quality of Addiction Treatment Quality Measurement

The goal of this study was to validate existing quality measures of addiction treatment.

Role: PI

IIR 12-385-2 VA HSR&D Bokhour (PI) 02/14-01-18

Title: Integrating HIV Care in VA: Extending PACT Principles to Specialty Care

Purpose: Same

Role: Co-Investigator

RRP 09-401 VA QUERI Giori/Sox-Harris (PI) 1/10-12/10

Title: Hemoglobin A1c in diabetic patients undergoing total joint arthroplasty

Role: Co-PI