

BIOGRAPHICAL SKETCH

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NAME: Ethan A. Halm

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

POSITION TITLE: Professor

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
Wesleyan University, Middletown, CT	B.A.	06/1986	Psychology
Yale University School of Medicine, New Haven, CT	M.D.	06/1991	Medicine
University of California, San Francisco, CA	Residency	06/1994	Internal Medicine
Harvard School of Public Health, Boston, MA	M.P.H.	06/1997	Public Health
University of Tennessee, Knoxville, TN	M.B.A.	12/18	Business

A. PERSONAL STATEMENT

I am a Professor of Medicine and the inaugural Vice Chancellor for Population Health at Rutgers Biomedical and Health Sciences (RBHS). In this role, I aim to advance Population Health initiatives in research, education, and clinical care across the Rutgers University schools of medicine, public health, nursing, pharmacy, dentistry, health professions, and graduate studies, and their affiliated clinical partners. I am also the Deputy Chief Population Health Officer for the RWJBarnabas Health System, a 12 hospital regional healthcare network that is the leading academic health system in NJ. I am a practicing general internal medicine physician and researcher with over 25 years of experience conducting federally funded outcomes, health services research (HSR), and population science studies. Prior to joining RBHS, I served for 13 years as the Chief of the Division of General Internal Medicine (GIM) and head of the Outcomes and Health Services Research program in the Department of Population and Data Sciences at University of Texas Southwestern Medical Center (UTSW). I have published over 250 peer-reviewed manuscripts and been a PI/MPI on over \$21 million in grants funding from NIH, AHRQ, and national and state foundations. My research focuses on understanding patient, provider, and system factors that influence the quality, equity, and outcomes of care, and designing interventions to improve care. I have a long track record of funding and supervising mentees on grants from NIH, AHRQ, ACS, and national and state foundations and agencies.

I am MPI of the NCI-funded U01 PRECISE Parkland-UTSW PROSPR center grant to improve colorectal cancer (CRC) screening in the Dallas county safety net health system. This project is harnessing data from the electronic medical record (EMR) to follow a cohort of 198,000 adults in 12 primary care community clinics to assess the quality and outcomes of CRC screening over 10 years. I was also the Director of the UTSW Center for Patient-Centered Outcomes Research (PCOR) that used EMR and claims data for observational and interventional studies, including projects that improved hepatocellular cancer screening and end-of-life care decision-making in the Parkland health system (PI, AHRQ R24). I have conducted large-scale pragmatic RCTs of population health outreach interventions that doubled CRC and hepatocellular cancer screening rates and improved chronic disease management. Other projects that have changed patient and provider behavior include: 1) EMR-enabled risk stratification and transition of care interventions that decreased readmissions; 2) a Colonoscopy Results Reporting System that increased guideline-concordant recommendations after polypectomy; and 3) tablet-based, personalized CRC risk screening in primary care settings. I have broad

experience using patient-reported, EMR, and administrative claims data for a broad variety of applied informatics, outcomes, health services, disparities, and population health studies in colorectal, lung, cervical, hepatocellular and breast cancer. I also have developed EMR-based multi-condition and disease-specific models predicting the risk of readmission and death that have been implemented in real-world practice.

I have a strong track record of successfully mentoring over 40 individuals including junior faculty on 15 different externally funded career development awards (NIH, AHRQ, ACS, RWJF), 10 CTSA KL2 awards, and multiple R01s and other independent investigator awards. My most senior trainees have been promoted to Associate and Full Professor, and include Division Chiefs, Department Vice-Chairs, and healthcare company CEOs. I am also the recipient of the UTSW Outstanding Mentorship Award.

In the New Jersey Alliance for Clinical Alliance for Clinical and Translational Science (NJACTS), I serve as teaching faculty in the Academy of Mentors for pre- or post- doctoral trainees and early stage investigators with an interest in clinical and population health sciences. Related to my role in the K12 and T32 applications, I will happily continue to train and mentor pre- and post-doctoral candidates and junior scientists and am well-positioned to help facilitate research using our 12 hospital RWJBarnabas Health System as a natural laboratory for observational and interventional studies. Additionally, as a member of the Academy of Mentors, I will be a: 1) reviewer or member of the Pilot Project Management Committee for the NJ ACTS Pilot Program; and 2) subject matter expert for training opportunities through Workforce Development and other programs.

Relevant ongoing and recently completed projects that I would like to highlight:

UM1 CA222035 (Consortium/Kaiser MPI: Skinner/Halm) 03/18 – 02/23
National Cancer Institute

Optimizing Colorectal Cancer Screening Precision and Outcomes in Community-Based Populations
Our Parkland-UT Southwestern PROSPR Center is one of four health systems in an NCI CRC screening research consortium. We are following a cohort of 70,000 low-income adults for processes and outcomes of CRC screening over 10 years. The U01 will assess harms, benefits, and accuracy of screening; variation and outcomes of surveillance; and multilevel factors influencing underuse and overuse of screening.

Role: MPI

R01 CA229834 (Pruitt) 09/18 – 08/23
National Cancer Institute

Revisiting Prior Cancer as an Exclusion Criterion for Cancer Clinical Trials

This study will: 1) systematically review use of prior cancer exclusions in NCI-sponsored trials; and 2) evaluate the impact of prior cancer on cause-specific and all-cause mortality using SEER-Medicare data for patients with breast, colorectal, kidney, liver, lymphoma, and pancreatic cancer.

Role: Co-Investigator

Clinical Scientist Development Grant 20-023 (Hong) 09/20 – 08/23
American Cancer Society

Optimizing Emergency Department Use for Adults Newly-Diagnosed with Cancer

This project will analyze patterns and predictors of emergency department use by newly diagnosed cancer patients, interview patients and clinicians to understand how they navigate acute care situations, and use this information to improve utilization of an oncology urgent care clinic to safely decrease avoidable emergency department visits.

Role: Mentor

CPRIT PP160075 (Singal) 09/16 – 08/21
Cancer Prevention Research Institute of Texas

Implementation of an evidence-based colorectal cancer (CRC) screening outreach program among socioeconomically disadvantaged patients in a safety net health system.

This large scale dissemination and implementation study that mailed 15,000 fecal immunochemical test (FIT) kits per year to patients not up to date on screening who were cared for in 12 community primary care clinics in a county safety-net integrated delivery system. An embedded pragmatic RCT evaluated a CRC screening "choice" invitation (FIT testing or colonoscopy) vs. mailed FIT.

Role: Co-I

R24 HS022418 (Halm)

09/13 – 09/19

Agency for Healthcare Research and Quality

UT Southwestern Center of Patient-Centered Outcomes Research (PCOR)

This grant expanded research infrastructure and training in PCOR and comparative effectiveness research (CER) and included three PCOR/CER projects harnessing data from the electronic health record to improve outcomes for patients with advanced cancer, pneumonia, and those at risk for hepatocellular cancer.

Role: PI

U54 CA163308 Parkland-UT Southwestern (Skinner, Halm)

09/0/11-8/31/17

PROSPR Center

National Cancer Institute

Parkland-UT Southwestern PROSPR Center: Colorectal cancer (CRC) screening in a safety net system

This grant examines the processes and outcomes of CRC screening in a population-based safety net health system. It includes: 1) a CER RCT of screening outreach interventions, 2) a personalized risk-based screening program; and 3) study of organizational factors influencing screening outcomes.

Role: Multiple PI

B. POSITIONS AND HONORS

Positions

1991-1994 Intern and Resident, University of California, San Francisco, CA,
1995-1997 Fellow, General Internal Medicine, Massachusetts General Hospital, Boston, MA
1997- 2004 Assistant Professor, Medicine and Health Policy, Mount Sinai School of Medicine, NY
2002-2005 Deputy Editor, *Medical Care*
2003-2008 Associate Chief and Director of Research, Division of General Internal Medicine, Mount Sinai
2004-2008 Associate Professor, Departments of Medicine and Health Policy, Mount Sinai, NY
2007-2008 Program Director, Masters of Science in Clinical Research/K30 training program, Mount Sinai
2007-2015 Medical Editor, Informed Medical Decisions Foundation, Boston, MA
2008-2021 Professor, Departments of Internal Medicine and Clinical Sciences, UT Southwestern, Dallas
2008-2021 Chief, Division of General Internal Medicine, University of Texas, Southwestern Medical Center
2008-2021 Chief, Division of Outcomes and Health Services Research, University of Texas, Southwestern
2011-2017 Director, Health Services & Comparative Effectiveness Research core, UT Southwestern CTSA
2012-2014 Standing Member, Health Services Organization and Delivery Study Section, CSR/NIH
2014-2018 Co-Director, Cancer Control & Prevention Program Harold C. Simmons Cancer Center, UTSW
2013-2021 Director, UT Southwestern Center for Patient-Centered Outcomes Research
2022- Professor of Medicine, Robert Wood Johnson Medical School, New Brunswick, NJ
2022- Vice Chancellor for Population Health, Rutgers Biomedical and Health Sciences, NJ
2022- Deputy Chief Population Health Officer, RWJBarnabas Health System, NJ

Honors:

Phi Beta Kappa, Outstanding Junior Faculty Abstract Award (AFMR), Milton Hamolsky Junior Faculty Research Award (SGIM), RWJ Foundation Generalist Physician Faculty Scholar Award, Outstanding Research Abstract Award (Academy Health), Health Care Hero (Dallas Business Journal), Fellow (American College of Physicians), Best Doctors in Dallas (D Magazine), Outstanding Mentorship Award (UTSW).

C. CONTRIBUTIONS TO SCIENCE *(Selected from 251 peer reviewed publications)*

1. Pragmatic clinical trials of population health interventions to increase CRC and hepatocellular cancer screening: I have conducted a series of large, population-based, randomized controlled trials of different patient- and system-level interventions in county-based safety net health systems that have: doubled rates of CRC screening initiation (one-time screening); tripled rates of CRC screening process completion over three years; and doubled screening rates for hepatocellular cancer screening among vulnerable patients. All of these population health outreach interventions were far superior to usual visit-based, opportunistic cancer screening.

- a. Gupta S, Halm EA, Rockey DC, Hammons M, Koch M, et al. Comparative effectiveness of fecal immunochemical test outreach, colonoscopy outreach, and usual care for boosting colorectal

cancer screening among the underserved: a randomized trial. *JAMA Intern Med.* 2013 Oct 14;173(18):1725-32. PMID PMC5228201.

- b. Singal AG, Gupta S, McCallister K, Sanders JM, Skinner CS, Bishop WP, Agrawal D, Mayorga C, Loewen AC, Santini N, Tiro JA, **Halm EA**. Outreach invitations for FIT and colonoscopy improve colorectal cancer screening rates: A randomized controlled trial in a safety net health system. *Cancer.* 2016 Feb 1;122(3):456-63. PMID PMC4724227.
- c. Singal AG, Tiro JA, Marrero JA, McCallister K, Mejas C, Adamson B, Bishop WP, Santini NO, **Halm EA**. Mailed outreach program increases ultrasound screening of patients with cirrhosis for hepatocellular carcinoma. *Gastroenterology.* 2017, Feb;152(3):608-615.e4. PMID PMC5285373.
- d. Singal AG, Gupta S, Skinner CS, Ahn C, Santini NO, Agrawal D, Mayorga CA, Murphy CM, Tiro JA, McCallister K, Sanders JM, Bishop WP, Loewen AC, **Halm EA**. Effect of colonoscopy outreach versus fecal immunochemical test outreach on colorectal cancer screening completion: A randomized clinical trial. *JAMA.* 2017; 318(9):806-815. PMID PMC5648645.

2. Developing clinical decision support tools and risk-based screening interventions to improve CRC screening. I have been involved in the development, implementation, and evaluation of a variety of EMR-based clinical decision support tools and patient-risk tailoring interventions that changed physician, patient, and organizational behavior to improve CRC screening processes and outcomes in a variety of inpatient and outpatient settings in both university and public health systems.

- a. Skinner CS, **Halm EA**, Bishop WP, Ahn C, Gupta S, Farrell D, Morrow J, Julka M, McCallister K, Sanders JM, Marks E & Rawl S. Impact of risk assessment and tailored versus non-tailored risk information on colorectal cancer testing in primary care: A randomized controlled trial. *Cancer Epidemiol Biomarkers Prev.* 2015. 24(10):1523-30; PMID PMC4952452.
- b. Skinner CS, Gupta S, **Halm EA**, Wright S, McCallister K, Bishop WP, Santini N, Mayorga C, Agrawal D, Moran B, Sanders JM & Singal A. Development of the Parkland-UT Southwestern Colonoscopy Reporting System (CoRS) for evidence-based colon cancer surveillance recommendations. *JAMIA.* Vol. 23(2):402-406, 2016. PMID PMC5009919.
- c. Skinner CS, Ahn C, **Halm EA**, Bishop WP, McCallister K, Sanders J, Santini NO, Farrell D, Singal AG. Recommendation of colorectal cancer testing among primary care patients younger than 50 with elevated risk. *Prev Med.* 102:20-23, 2017. PMID: PMC5557096.
- d. Magrath M, Yang E, Ahn C, Mayorga CA, Gopal P, Murphy CC, Gupta S, Agrawal D, **Halm EA**, Borton EK, Skinner CS, Singal AG. Impact of a clinical decision support system on guideline-concordance of surveillance recommendations for colonoscopy after polypectomy. *J Natl Compr Canc Netw.* 2018; 16(11):1321-1328. PMID PMC7210781.

3. Predicting and preventing hospital readmissions using EMR-enabled risk models and interventions: I have published 13 manuscripts on developing and validating EMR-enabled models to predict and prevent hospital readmissions. These studies were among the first to use EMR data to predict readmissions and generate real-time risk assessments targeting high risk individuals. My colleagues and I have developed and compared the effectiveness of different generic and disease-specific models.

- a. Amarasingham R, Moore BJ, Tabak Y, Drazner MH, Clark C, Zhang S, Reed WG, Swanson T, Ma Y, **Halm EA**. An Automated Model to Identify Heart Failure Patients at Risk for 30-Day Readmission or Death Using Electronic Medical Record Data. *Med Care.* 2010, 48:981-988.
- b. Nijhawan AE, Clark C, Kaplan R, Moore B, **Halm EA**, Amarasingham R. An electronic medical record-based model to predict 30 day risk of readmission and death among HIV- infected inpatients. *J Acquir Immune Defic Syndr.* 2012, 61(3):349-58.
- c. Amarasingham R, Velasco F, Xie B, Clark C, Ma Y, Zhang S, Bhat D, Lucena B, Huesch D, **Halm EA**. Electronic medical record-based multi-condition models to predict the risk of 30 day readmission or death among adult medicine patients: Validation and comparison to existing models. *BMC Med Inform Decis Making.* 2015, 15:39.
- d. Nguyen OK, Makam AN, Clark C, Zhang S, Xie B, Velasco F, Amarasingham R, **Halm EA**. Vital signs are still vital: Instability on discharge and the risk of post-discharge adverse outcomes. *J Gen Intern Med.* 2017, Jan;32(1):42-48.

4. Improving the care of patients with newly diagnosed cancer: A recent body of work focuses on understanding the dynamics and drivers of emergency department visits and hospitalizations for patients within their first six months of a cancer diagnosis using regional EMR, health information exchange, and geographic information systems databases. This includes understanding patient, provider, system factors that influence why, where, and where patients seek acute care, as well as interventions using a cancer urgent care clinic to improve the efficiency and patient-centeredness of care for this vulnerable population.

1. Hong AS, Froehlich T, Hobbs SC, Lee SJC, **Halm EA**. Impact of a cancer urgent care clinic on regional emergency department visits. *J Oncology Practice*, 2019. PMID: 31021677
2. Hong AS, Sadeghi N, Harvey V, Lee SC, **Halm EA**. Characteristics of Emergency Department Visits and Select Predictors of Hospitalization for Adults With Newly Diagnosed Cancer in a Safety-Net Health System. *J Oncology Practice*, 2019. PMID: 30964735.
3. Hong AS, Chang H, Courtney DM, Fullington H, Lee SJC, Sweetenham JW, **Halm EA**. Patterns and Results of Triage Advice Before Emergency Department Visits Made by Patients With Cancer. *JCO Oncology Practice*, 2021. PMID: 33417485
4. Hong AS, Nguyen DQ, Lee SJC, Courtney DM, Sweetenham JW, Sadeghi N, Fullington H, **Halm EA**. Prior Frequent Emergency Department Use as a Predictor of Emergency Department Visits After a New Cancer Diagnosis. *JCO Oncology Practice*, 2021. PMID: 34038164

Complete List of Peer-Reviewed Published Work in:

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