BIOGRAPHICAL SKETCH

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NAME: Randall Scott Stafford, MD, PhD

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POSITION TITLE: Professor of Medicine

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	Completed	FIELD OF STUDY
Reed College, Portland, OR	B.A.	05/1980	Sociology
Johns Hopkins University, Baltimore, MD	M.H.S.	06/1982	Health Admin & Planning
University of California, Berkeley, CA	M.S.	06/1988	Health and Med. Science
University of California, Berkeley, CA	Ph.D.	12/1990	Epidemiology
Centers for Disease Control & Prevention, Atlanta GA	Fellowship	12/1991	Epidemiology (post-doc)
University of California, San Francisco, CA	M.D.	06/1992	Medicine
Harvard Med. School & Massachusetts General Hosp	Residency	09/1994	Primary Care Internal Med

A. Personal Statement

At Stanford, my roles include Professor of Medicine, Director of the Program on Prevention Outcomes and Practices, clinical practice in the Stanford Internal Medicine Clinic, and Director of Research for the Medicine and the Muse Program. I am committed to innovation in clinical care and the rigorous testing of new interventions that seek to improve care. I am supportive of healthcare advances that are complementary approaches that do not have economically-motivated our healthcare system champions. As a leader of Medicine and the Muse, Stanford's program in medical humanities, I am an advocate of the use of narrative discourse and the performing arts as means of humanizing healthcare and improving health outcomes.

My training includes a PhD in epidemiology from UC Berkeley, an MD from UCSF, Internal Medicine residency at the Massachusetts General Hospital, and a post-doctoral fellowship with the CDC in Atlanta. My research focuses on: 1) evaluation of quality of care and patient engagement, 2) designing and implementing innovative approaches to improve patient involvement and outcomes, 3) strategies to reduce health care disparities, and 3) using clinical trial methods to rigorously test these strategies. I am currently the PI of a multi-site clinical trial of a successful decision-making tool for stroke prevention in atrial fibrillation. My work has also focused on patient engagement in hypertension, anxiety, preventive aspirin use, diabetes prevention, chronic pain, falls prevention, and osteoporosis. These projects have reinforced my commitment to using computer and mobile applications to re-engineer clinical care. My life as a writer and musician in medicine also emphasizes the impacts of the arts on both patients and practitioners. Refinement of our virtual bedside concert (VBC) model and its rigorous testing in trauma patients requiring surgery will leverage my skills in innovation generation, clinical trial research, patient communication, medical humanities, and digital health technology. I am a seasoned clinical investigator well equipped to lead this project, which will contribute to new strategies of Music Medicine that can improve post-operative recovery, enhance patient outcomes, and mitigate health disparities.

I will manage each step in the development and testing of our proposed virtual bedside concerts. In Aim 1 (VBC Intervention Development), my role will include supervising: 1) the conduct of data gathering through a survey and focus groups, 2) incorporation of our findings into the refinement of the intervention, and 3) prototype protocol testing to ensure seamless clinical trial logistics. In Aim 2 (Pilot Operational Testing of VBCs) my role will focus on supervising: 1) staff and musician training to ensure precise implementation of the trial protocol, 2) continual monitoring of intervention fidelity, data collection integrity, and potential patient safety issues, 3) facilitating collaboration and problem solving between PMHU, the three clinical sites, and the co-

Investigators, 4) planning and implementing data quality checks and data analysis, and 5) dissemination of our findings and intervention model through academic (e.g., articles and conference presentations) and non-academic venues (e.g., social media, musical consortia). I will work closely with co-Investigators, collaborating clinical sites, and PMHU to ensure that each stage of this project is efficiently completed.

1. Fani Marvasti F, **Stafford RS**. From sick care to health care--reengineering prevention into the U.S. system. *N Engl J Med*. 2012 Sep 6;367(10):889-91. PMCID: PMC4339086.
2. Alexander GC, Tajanlangit M, Heyward J, Mansour O, Qato D, Stafford RS. Use and content of primary care office-based vs telemedicine care visits during the COVID-19 Pandemic in the US. JAMA Netw Open, 2020, 3(10):e2021476. doi:10.1001/jamanetworkopen.2020.21476.PMID: 33006622.PMCID:PMC7532385.
3. Pourshams I, Lin B, Wang PJ, **Stafford RS**. Decision-making experiences and decisional regret in patients receiving implanted cardioverter-defibrillators. *Heart Mind*. Epub 2022 Feb;6(1):32-5.
4. Nunes JC, Baykaner T, Pundi K, DeSutter K, True Hills M, Mahaffey K, Sears SF, Morin DP, Lin B, Wang PJ, **Stafford RS**. Design and Development of a Digital Shared Decision-Making Tool for Stroke Prevention in Atrial Fibrillation. JAMIA Open, 2023. Feb 2; 6(1):ooad003. doi: 10.1093/jamiaopen/ooad003. PMID: 36751465; PMCID: PMC9893868

B. Positions and Honors

Positions:

Department	Position	Organization	Dates
Health Care Planning	Health Planner	State of Maryland	1982
Medical Economics	Health Care Policy Analyst	Kaiser Permanente	1982-89
Medicine	Instructor in Medicine	Harvard Medical School/MGH	1994-98
Medicine/Health Policy	Asst. Professor of Medicine	Harvard Medical School/MGH	1998-01
Medicine	Asst. Director, Primary Care Operations Improvement	Massachusetts General Hospital	2000-01
SPRC/Medicine	Asst. Professor of Medicine	Stanford University	2001-04
SPRC/Medicine	Director, Program on Prevention Outcomes and Practice	Stanford University	2002-present
SPRC/Medicine	Associate Director, SPRC T32	Stanford University	2004-16
SPRC/Medicine	Assoc. Professor of Medicine	Stanford University	2004-11
School of Population Health/Epidemiology	Visiting Scholar	University of Auckland, New Zealand	2004-05
Health Sciences	Faculty Fellow	Stanford Ctr at Peking Unv, China	2014-present
Faculty of Medicine	Guest Dissertation Advisor	University of Melbourne, Australia	2022-present
SPRC/Medicine	Professor of Medicine	Stanford University	2011-present

Selected Professional Leadership Experiences-

Organization	Position	Dates
Calif. Tobacco-related Disease Research Prgm	Member and Chair (2010-12)	2008-2012
Council on Aspirin for Health and Prevention	Member and Chair (2011)	2004-2018
American Journal of Preventive Medicine	Member, Board of Governors	2005-2010
American College of Preventive Medicine	Prevention Practices Comm. Member	2006-2007
Age Bold, Inc: an online physical activity company	Chief Medical Advisor	2018-present
Genwell: a health and literacy non-profit)	Member, Board of Directors	2021-present
California Medicaid (Medi-Cal) Program,	Member, Drug Utilization Review Board	2011-present
American Heart Association	Hypertension Guidelines Working Group	2014-present

Selected Honors: Reed College: Phi Beta Kappa, Class of 1921 Award. Johns Hopkins: U.S. Public Health Service Traineeship; Delta Omega Honorary Society. UC Berkeley: University Fellowship; Agency for Healthcare Research and Quality Dissertation Grant; UC San Francisco: Runner-up *Western Journal of Medicine* Student Research Paper Contest. MGH: Partners in Excellence Award, 2001. Stanford: Outstanding Teaching Award, 2009.

C. Contribution to Science

Contribution 1: Innovative Health Strategies to Improve Health Outcomes

My early research suggested that physicians do poorly in using patient education and communication methods to deliver chronic disease management and prevention services. Randomized controlled trials (RCTs) have suggested a transformative role of digital technologies in improving quality of care and patient outcomes. Much of my later career has been devoted to developing and rigorously testing improvement strategies through new digital health technologies, delivered via mobile health applications, video programming, electronic health records, and online shared decision making; my work validating digital technologies has optimized their use in patient care. I am currently contributing to the creation and testing of mobile and online tools for stroke prevention decision-making in atrial fibrillation (AHA DECIDE Center), post-op opioid management (S-SMART with Palo Alto VA), hypertension management (AHA Health Tech Center), fall prevention and osteoarthritis self-management (Age Bold), and anxiety management in university students (with Innsightful, Inc.).

1. Romano MJ, **Stafford RS**. Electronic health records and clinical decision support systems: impact on national ambulatory care quality. *Arch Intern Med*. 2011 May 23;171(10):897-903. Epub 2011 Jan 24. PMCID: PMC4016790.
2. Ma J, Yank V, Xiao L, et al. [3 others], **Stafford RS**. Translating the Diabetes Prevention Program lifestyle intervention for weight loss into primary care: a randomized trial. *JAMA Intern Med*. 2013 Jan 28;173(2):113-21. PMCID: PMC3856315.
3. Jacobson CL, Foster LC, Arul H, Rees A, **Stafford RS**. A Digital Health Fall Prevention Program for Older Adults: Feasibility Study. *JMIR Form Res*. 2021 Dec 23;5(12):e30558. PMCID: PMC8738986.
4. Baykaner T, Pundi K, Lin B, et al. [15 others, including **Stafford RS**]. The ENHANCE-AF Clinical Trial to Evaluate an Atrial Fibrillation Shared Decision-Making Pathway: Rationale and Study Design. *Am Heart J*. 2022 Jan 26:S0002-8703(22)00013-8. PMID: 35092723.

Contribution 2: Outpatient Quality of Care Measurement and Improvement

Compared to inpatient activities, quality of care in ambulatory settings has been neglected, resulting missed diagnoses, suboptimal care, and poor decision-making support in heart disease patients. Efforts to improve the quality of outpatient care are often hampered by the lack of performance measures for assessing physician practice patterns. My work designing and testing measures of outpatient quality has contributed to an improved capacity to achieve better quality of care in outpatients, including those with heart disease. I have analyzed data from visit-based surveys, medical claims, prescription claims, and pharmacy dispensing to investigate outpatient care and in turn devise ways to improve care quality. My contribution to translating this work into health policy is seen in my work with NCQA (CVD Measurement Advisory Panel) and the California Medicaid Program (Drug Utilization Review Board).

1. Al Shammeri O, **Stafford RS**, Alzenaidi A, Al-Hutaly B, Abdulmonem A. Quality of medical management in coronary artery disease. *Ann Saudi Med*. 2014 Nov-Dec;34(6):488-93. PMCID: PMC6074575.
2. Jiao S, Murimi IB, **Stafford RS**, Mojtabai R, Alexander GC. Quality of Prescribing by Physicians, Nurse Practitioners, and Physician Assistants in the United States. *Pharmacotherapy*. 2018 Apr;38(4):417-427. PMID: 29457258.
3. Shah SJ, **Stafford RS**. Patterns of Systolic Blood Pressure Control in the United States, 2016. *J Gen Intern Med*. 2018 Aug;33(8):1224-1226. PMCID: PMC6082185.
4. Sandhu AT, Tisdale RL, Rodriguez F, et al. [5 others, including **Stafford RS**]. Disparity in the Setting of Incident Heart Failure Diagnosis. *Circ Heart Fail*. 2021 Aug;14(8):e008538. PMCID: PMC9070116.

Contribution 3: Clinical Trials Methods for Clinical Process Re-Engineering

While clinical trial methods originated in testing the efficacy and safety of pharmaceuticals, these methods are equally applicable to testing behavioral strategies and how they relate to health improvement. My work has applied RCT methods to interventions that aim to change the behavior of physicians and patients, with the long-term aim of devising methods for improved doctor-patient communication and patient care. My expertise in this field extends to the design, implementation, statistical analysis, and meta-analysis of clinical trials. This work used real world settings in specialist physician offices, primary care physician offices, and community centers to rigorously determine the effectiveness and cost-effectiveness of behavioral interventions. As a

result, this work has provided useful and generalizable information that can be implemented to improve patient care for those with or at risk for heart disease and diabetes.

1. Drieling RL, Ma J, Thiyagarajan S, **Stafford RS**. An Internet-based osteoporotic fracture risk program: effect on knowledge, attitudes, and behaviors. *J Womens Health (Larchmt)*. 2011 Dec;20(12):1895-907. PMID: 21970565.
2. Rosas LG, Thiyagarajan S, Goldstein BA, et al. [4 others], **Stafford RS**. The effectiveness of two community-based weight loss strategies among obese, low-income US Latinos. *J Acad Nutr Diet*. 2015 Apr;115(4):537-50.e2. PMCID: PMC4380577.
3. Rosas LG, Vasquez JJ, Hedlin HK, et al. [5 others], **Stafford RS**. Comparing enhanced versus standard Diabetes Prevention Program among indigenous adults in an urban setting: a randomized controlled trial. *BMC Public Health*. 2020 Jan 30;20(1):139. PMCID: PMC6993459.
4. Kong JT, Puetz C, Tian L, et al. [5 others, including **Stafford RS**]. Effect of Electroacupuncture vs Sham Treatment on Change in Pain Severity Among Adults With Chronic Low Back Pain: A Randomized Clinical Trial. *JAMA Netw Open*. 2020 Oct 1;3(10):e2022787. PMCID: PMC7592030.

Contribution 4: Health Disparities & Non-Clinical Determinants in Heart Disease Practices & Outcomes

A foundational aspect of my research is based on the common occurrence of variations in health care due to non-clinical factors, including ethnicity, health payment, and socioeconomic status. My research on practice variation started with my self-directed analyses of cesarean section use for my PhD and continued with a focus on prevention and chronic disease management practices in my early career. My findings of substantial and widespread unwarranted, non-clinical variation in practice patterns continues to influence my research because these variations often represent inadequate care quality, health disparities, and compromised evidence translation. My studies have contributed to the growth of health care quality as a dominant concern in health services research and to the recognition that efforts to improve quality and equity of care were warranted.

1. Rosas LG, **Stafford RS**. Practical Research Strategies for Reducing Social and Racial/Ethnic Disparities in Obesity. *Int J Obes (Lond)*. 2012 Jul;2012(2):s16-s22. doi: 10.1038/ijosup.2012.5. PMCID: PMC3647479.
2. Jan C, Zhou X, **Stafford RS**. Improving the health and well-being of children of migrant workers. *Bull World Health Organ*. 2017 Dec 1;95(12):850-852. PMCID: PMC5710085.
3. Alexander GC, Tajanlangit M, Heyward J, Mansour O, Qato DM, **Stafford RS**. Use and Content of Primary Care Office-Based vs Telemedicine Care Visits During the COVID-19 Pandemic in the US. *JAMA Netw Open*. 2020 Oct 1;3(10):e2021476. PMCID: PMC7532385.
4. Nunes JC, Rice EN, **Stafford RS**, Lewis EF, Wang PJ. Underrepresentation of Ethnic and Racial Minorities in Atrial Fibrillation Clinical Trials. *Circ Arrhythm Electrophysiol*. 2021 Dec;14(12):e010452. PMID: 34789014.

Contribution 5: Patient & Consumer Communication of Health Information

There is a growing gap between the technologies and strategies of modern health care and consumer understanding of their care. Narrowing this gap is crucial if consumers are to help self-manage their conditions, which can improve outcomes and resource use efficiency. To advance patient communication and consumer knowledge. I have written numerous consumer-oriented pieces about key clinical conditions in popular journals or blogs. I have published 56 blogs via the Stanford School of Medicine Scopeblog (with 40,000+ subscribers), covering atrial fibrillation, diabetes/prediabetes, popular diets, aspirin use for prevention, high blood pressure, and COVID-19. I have also used these blogs to teach trainees the craft of writing for consumers, and I have guided trainees in co-authoring three series on heart failure, depression, and urinary tract infections. By encouraging their focus on plain writing, narrative story-telling, distillation of complex concepts, and pragmatic take-aways, I have seen growth in trainee writing abilities that have carried into their academic writing.

1. **Stafford RS**. Massachusetts General Hospital, 1992. *Hektoen Int*. 2016;8(3) (Summer). Available from: https://hekint.org/2017/02/23/massachusetts-general-hospital-1992/.
2. **Stafford RS**. Consumer Blog Series on Atrial Fibrillation. (7 part series). 2018 Sept-Nov. In: Scope Published by Stanford Medicine. [Internet]. Available from:

https://scopeblog.stanford.edu/tag/understanding-afib/
3. Chiang KF, Shah SJ, **Stafford RS**. A Practical Approach to Low-Dose Aspirin for Primary Prevention. *JAMA*. 2019 Jul 23;322(4):301-302. Erratum in: JAMA. 2019 Aug 27;322(8):785. PMID: 31251325.
4. Pundi K, Baykaner T, True Hills M, et al. [4 others], **Stafford RS**. Blood Thinners for Atrial Fibrillation Stroke Prevention. *Circ Arrhythm Electrophysiol*. 2021 Jun;14(6):e009389. PMCID: PMC8208521.

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/randall.stafford.1/bibliography/40355540/public/