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| BIOGRAPHICAL SKETCH Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person.  **DO NOT EXCEED FIVE PAGES.** | | | |
| NAME: Heller, David J. | | | |
| eRA COMMONS USER NAME (credential, e.g., agency login) DAVIDHELLER | | | |
| POSITION TITLE: Assistant Professor, Department of Health System Design and Global Health, Icahn School of Medicine at Mount Sinai | | | |
| 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)* | MM/YY | FIELD OF STUDY |
| Brown University, Providence, RI  Johns Hopkins Bloomberg School of Public Health, Baltimore, MD  University of California, San Francisco School of Medicine, San Francisco, CA  Johns Hopkins Hospital, Baltimore, MD  University of California, San Francisco School of Medicine, San Francisco, CA  Fogarty International Center, Mbale, Uganda | AB  MPH  MD  Residency  Fellowship  Fellowship | 05/02  05/08  05/09  06/12    06/14  06/15 | Ethics and Political Philosophy  Health Systems and Policy  Medicine  Internal Medicine  Primary Care Research  Global Health |
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**A. Personal Statement**

I am a primary care physician whose goal is to become an independent researcher who designs, implements, and evaluates non-physician-led clinical interventions for the integrated control of multiple chronic conditions in low- and middle-income countries. Chronic non-communicable diseases (NCDs) such as hypertension and depression, which we struggle to detect and manage in the United States, are now the leading causes of disability and death in low- and middle-income countries (LMICs). Fragile health systems in LMICs increasingly struggle to respond to this rapid transition due to staff and supply shortages and an infrastructure designed chiefly for acute, curative care of communicable illnesses. Effective LMIC chronic disease programs have leveraged non-physicians, such as nurses and community health volunteers, to render care. However, most of these initiatives focus on only one disease, an approach that becomes increasingly inefficient and ineffective as NCDs become more prevalent and disabling.

I aim in my current work to develop a care model that addresses the behavioral risk factors common to nearly all chronic diseases – namely tobacco use, alcohol abuse, physical inactivity, and depressed mood – and apply it to the integrated treatment of two leading causes of chronic disease morbidity and mortality: hypertension and depression.

My previous work in global health has ranged from the quantitative assessment of trauma care and hypertension screening programs in Pakistan and Uganda to the qualitative evaluation of a researcher coalition’s impact to influence health policy in Bangladesh. After graduating from Brown University, I received my MD degree from the University of California San Francisco (UCSF) and a Master of Public Health from Johns Hopkins. During this time, I completed a summer internship at the World Health Organization, where I first developed an interest in multiple-disease primary care models through research into country health system performance. Then, as a resident at Johns Hopkins, I came to realize a passion for the clinical practice of outpatient care that leverages screening, counseling, and judicious treatment algorithms for the primary prevention of cardiovascular and other conditions that led to many preventable inpatient admissions. This interest led me to return to UCSF for a primary care research fellowship, where I gained an advanced certificate in implementation science methods and further research experience in both quantifying models for cardiovascular disease (CVD) prevention policy (with Kirsten Bibbins-Domingo) and qualitatively evaluating researchers’ ability to influence policy implementation (with Andrew Bindman). A subsequent Fogarty International Center research fellowship in Mbale, Uganda allowed me to apply these skills in a global setting: I evaluated the quality of hypertension care associated with the Sustainable East African Research for Community Health (SEARCH) study both through a quantitative analysis of the consistency of care delivery in Uganda and Kenya, and a mixed-methods evaluation of patients’ and providers’ use and retention of care messages in Mbale.

After joining the faculty in the Department of Health System Design and Global Health at Mount Sinai, I have continued to develop these skills through my subsequent work in Uganda and Ghana. With Rose Clarke Nanyonga at the International Hospital Kampala (IHK) in Uganda, I launched a mixed-methods study of the quality of hypertension care at this private Ugandan hospital, which has led to five abstracts to date with two completed publications and three more pending. Separately, I have engaged in policy research, advocacy, and teaching related to chronic disease control, including mentorship of nine medical students; a co-authored book chapter; and several additional publications on global chronic disease policy.

With Dr. Jim Phillips at Columbia and Dr. Abraham Oduro at the Navrongo Health Research Centre in Ghana, I wrote a Fogarty R21 award to evaluate the feasibility of leveraging an existing nurse-led primary care initiative, the Community-Based Health Planning and Services (CHPS) program, for the control of cardiovascular disease risk factors. Building relationships with Ghanaian colleagues, I learned how formative research shapes program design, through structured interviews with nurses, their supervisors, and community members. We found that nurses were able to treat hypertension – but also encountered a large burden of behavioral risk factors for CVD, such as alcohol and tobacco use, and obesity – which contribute to and coexist with depression and other chronic conditions, and which nurses lack the time and training to diagnose and manage. Thus, I have worked with my mentorship team, and nurses and community volunteers in Navrongo, to develop a counseling and behavior change model – using volunteers aiding nurses – that treats these underlying behavioral determinants in order to control multiple chronic conditions, starting with hypertension and depression.

**B. Positions and Honors**

**Positions and Employment**

2002-2003 Emerson Fellow, The Congressional Hunger Center, Washington, DC

2012-2014 Fellow, Department of General Internal Medicine, University of California, San Francisco (UCSF), San Francisco, CA

2014-2015 GloCal Fellow, Institute for Health Policy Studies, University of California, San Francisco (UCSF), San Francisco, CA

2016- Assistant Professor, Department of Health System Design and Global Health, Icahn School of Medicine at Mount Sinai

**Other Experience and Professional Membership**

2012- Certification, American Board of Internal Medicine

2012- Member, Society of General Internal Medicine

**Honors and Awards**

2000 Curt Ducasse Premium for Outstanding Scholarly Work in Metaphysics, Brown University

2002 Phi Beta Kappa, Brown University

2007 Reed Frost Scholarship for Academic Merit and Professional Promise, Johns Hopkins Bloomberg School of Public Health

2008 Sibley and Catherine Hoobler Award for Excellence in Public Health and Medicine, Johns Hopkins Bloomberg School of Public Health

2008 Finalist, Young Voices in Research for Global Health essay competition, the Global Forum for Health Research

2011 3rd Place Finalist, Oral Case Presentation Competition, Maryland American College of Physicians Mulholland-Mohler Annual Meeting

**C. Contributions to Science**

1. I have engaged in mentored research to quantify the burden of cardiovascular and other chronic diseases in the US and sub-Saharan Africa, and identify solutions to address it, since 2009. This work has included a field research through a mentored Fogarty International Center fellowship and R21 award as detailed above; but also cardiovascular modeling studies. In addition to the four manuscripts below and others, I recently led a narrative review manuscript, co-authored by Rajesh Vedanthan, Carol Horowitz and others, on health system barriers and facilitators to non-physician care models for chronic conditions, now under review following revised resubmission to *JAMA Open*.

2020 **Heller DJ,** Balzer LB, Kazi DS, Charlebois ED, Kwarisiima D, Mwangwa F, Jain V, Kotwani P, Chamie G, Cohen CR, Clark TS, Ayieko J, Mirembe DB, Petersen M, Kamya MR, Havlir D, Kahn JG. Hypertension Testing and Treatment in Uganda and Kenya through the SEARCH Study: An Implementation Fidelity and Outcome Evaluation. *PLOS One,* Jan 15; 15(1):e0222801.

2017 **Heller DJ,** Coxson PG, Penko J, Pletcher M, Goldman L, Odden M, Kai D, Bibbins-Domingo K. Evaluating the Impact and Cost-Effectiveness of Statin Use Guidelines for Primary Prevention of Coronary Heart Disease and Stroke. *Circulation*, Sep 19;136(12):1087-1098.

2016 Kwarisiima D, Balzer L, **Heller DJ,** Kotwani P, Chamie G, Clark T, Ayieko J, Mwangwa F, Jain V, Byonanebye D, Peterson M, Havlir D, and Kamya M. Population based assessment of hypertension among HIV patients in rural Uganda. *PLoS One.*

2015 Odden MC, [Pletcher MJ](http://profiles.ucsf.edu/mark.pletcher), Coxson PG, Thekkethala D, Guzman D, **Heller DJ**, Goldman L, [Bibbins-Domingo K](http://profiles.ucsf.edu/kirsten.bibbins-domingo). Cost-effectiveness and population impact of statins for primary prevention in adults aged 75 years or older in the United States. Ann Intern Med. 2015 Apr 21; 162(8):533-41. PMID: 25894023.

1. In addition to these chiefly quantitative analyses, I have engaged in qualitative and mixed methods evaluative work on chronic disease control in global and US settings. In addition to my work using semi-structured interviews to understand how universities and policymakers can collaborate to aid implementation of the Affordable Care Act, I am currently interviewing providers and patients in Uganda and Ghana regarding their perceptions of cardiovascular care quality as below.

2020 Haykin LA, Francke JA, Abapali A, Yakubu E, Dambayi E, Jackson EF, Aborigo R, Awuni D, Nonterah E, Oduro AR, Bawah AA, Phillips JF, and **Heller DJ**. Adapting a nurse-led primary care initiative to cardiovascular disease control in Ghana: a qualitative study. In press, *BMC Public Health.*

2020 Green AS, Lynch HM, Nanyonga RC, Squires AP, Gadikota-Klumpers DD, Schwartz JI, and **Heller DJ**. “Assessing Providers’ Approach to Hypertension Management at a Private Hospital in Kampala, Uganda.” *Annals of Global Health* Jan 14; 86(1):5.

2019 **Heller DJ**, Kumar A, Kishore SP, Horowitz C, Joshi R, Vedanthan R. Assessment of Barriers and Facilitators to the Delivery Care for Non-Communicable Diseases by Non-physician Health Workers in Low- and Middle-income Countries: A Narrative Review and Qualitative Analysis. *JAMA Network Open* Dec 2; 2(12):e1916545.

2014 **Heller DJ**, Hoffman C, Bindman A. “Supporting the Needs of State Health Policymakers through University Partnerships.” *Journal of Health Politics, Policy and Law* 39(3) p. 667-677.

1. In addition to the above peer-reviewed manuscripts and abstracts, I have also engaged in advocacy, teaching, and policy research related to chronic disease control. These outputs include a successful application to add Losartan to the World Health Organization’s ve neglect of chronic non-communicable conditions in global development debates; and a 2018 textbook chapter on causes of and interventions for non-communicable disease. I have also authored several peer-reviewed articles in this domain, including

2018 **Heller DJ**, Kishore SP. Impacting Global Health Delivery Through Advocacy: The Case of Losartan. *Global Heart* Dec 21. Epub ahead of print.

2018 **Heller DJ**. Building a Foundation of Training: Community Collaboration to Make Cardiovascular Care Work. *Global Heart* May 11; Epub ahead of print.

2018 Kishore SP, Blank E, **Heller DJ**, Patel A, Peters A, Price M, Vidula M, Fuster V, Onuma O, Huffman MD, Vedanthan R. Modernizing the World Health Organization List of Essential Medicines for Preventing and Controlling Cardiovascular Diseases. *Journal of the American College of Cardiology* Feb 6;71(5): 564-574.

2017 **Heller DJ**, Kishore SP. Closing the Blood Pressure Gap: An Affordable Proposal to Save Lives Worldwide. *BMJ Global Health*, Sep 25;2(3):e000429.

For a complete list of peer-reviewed and other publications, as well as a complete curriculum vitae, see <https://www.researchgate.net/profile/David_Heller4>.

**D. Additional Information: Research Support and/or Scholastic Performance**

**Current Research Support**

Teva Pharmaceuticals: Heller (PI) April 2017-May 2020

Assessing the Burden of Multiple Chronic Conditions within the Mount Sinai Health System

This study aims to develop patient and peer-led disease self-management tools for vulnerable low-income patients with multiple chronic conditions associated with the PeakHealth primary care initiative at the Mount Sinai Hospital – and to explore the use of these tools in other low-resource contexts such as Navrongo, Ghana.

**Completed Research Support**

NIH-Fogarty R21 PAR-16-052: Phillips, James (PI); Heller (Co-I) September 2016 – July 2018

Adapting the WHO Cardiovascular Disease Risk Management Package to the Ghanaian Community-Based Health Planning and Services (CHPS) Primary Care Model: An Implementation Pilot Study. The purpose of this study is to identify means to pilot a cardiovascular risk treatment intervention in the region using the nurse-led CHPS protocol, through mixed-methods formative research.

NIH-NHLBI: 3R25TW009343-03S3: Heller (PI) July 2014 – November 2015

Hypertension Control through SEARCH (HTNC) Study. The purpose of this study was to identify barriers and facilitators to hypertension screening, referral, and treatment within a larger cluster-randomized trial in Uganda and Ghana of integrated HIV, hypertension, and diabetes testing and care aiming to evaluate the impact of universal antiretroviral treatment of HIV on rates of new infection, among other endpoints.

NIH-NRSA: D55HP23202 Heller (PI) July 2012-June 2014

Faculty Development in Primary Care. This career development grant supported my two-year primary care research fellowship at UCSF as detailed above.