

BIOGRAPHICAL SKETCH

NAME	Kharrazi, Hadi H.K.		
eRA COMMONS	kharrazi		
POSITION TITLE	Assistant Professor & Research Director		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	DATE	FIELD OF STUDY
Dalhousie University, Halifax, Canada	PhD	2008	Interdisciplinary (Computer Sci./Medicine)
Dalhousie University, Halifax, Canada	MHI	2005	Health Informatics
TUMS-IUMS, Tehran, Iran	MD	2003	Medicine

(A) Personal Statement

Leadership: Dr. Kharrazi is the research director of the Johns Hopkins Center for Population Health IT (CPHIT). He is pursuing population health IT research that provides direct population-based decision support to providers, patients, and payers. His expertise includes assessing the needs and impact of health IT on care delivery, designing interoperable platforms for population health, developing and evaluating advanced predictive models for risk stratification using a diverse set of data sources (EHRs, claims, geo-social data), and testing the feasibility of new quality metrics across various denominators and healthcare workflows.

Research: Dr. Kharrazi has been the PI of several federal grants and contracts with special focus on population health informatics. His recent projects include the: (1) Development and evaluation of a 30-day hospital-readmission prediction model based on real-time Health Information Exchange data in Maryland; (2) Evaluation of stage-3 of EHR ‘Meaningful Use’ care coordination measures in Maryland and Arkansas hospitals; (3) Development of federal and statewide quality measures for population health and overuse; (4) Design of a comprehensive data-driven framework that provides a spatiotemporal prediction of obesity within the veteran population on a national scale; and, (5) Development of a risk score to predict falls among elderly in Maryland using a diverse set of population-level data sources (RWJF DASH mechanism).

Teaching: Dr. Kharrazi also has an extensive record on education. He has developed more than a dozen courses in health informatics. He was the Co-PI of an ONC award to develop a national curriculum for population health informatics and train more than 9000 healthcare professionals nationally (see <http://learnHIT.com>). He has been part of the NLM training programs, and has participated in curriculum development of two certificate programs (funded by ONC) and one training module (funded by PCORI). He is currently the director of the DrPH Informatics track program at the Johns Hopkins School of Public Health, and the co-director of the PhD program in Health Informatics at the Johns Hopkins School of Medicine.

Dr. Kharrazi has in-depth expertise with data governance, various data types (EHRs and insurance claims), health IT systems, and population health informatics. Following are related publications:

- [1] **Kharrazi H**, Chi W, Chang HY, Richards TM, Gallagher JM, Knudson SM, Weiner JP. Comparing population-based risk-stratification model performance using data extracted from electronic health records versus administrative claims. *Medical Care*. 2017; 55(8): 789-796
- [2] **Kharrazi H**, Wang C, Scharfstein D. Prospective EHR-based clinical trials: The challenge of missing data. *Journal of General Internal Medicine (JGIM)*. 2014; 29(7): 976-978
- [3] **Kharrazi H**, Lasser E, Yasnoff WA, Loonsk J, Advani A, Lehmann H, Chin D, Weiner JP. A proposed national research and development agenda for population health informatics: Summary recommendations from a national expert workshop. *Journal of American Medical Informatics Association (JAMIA)*; 2017; 24(1): 2-12

(B) Positions and Honors

■ Positions and Employment

- 2012 – Now Assistant Professor
Johns Hopkins School of Public Health, Health Policy and Management (HPM)
Johns Hopkins School of Medicine, Division of Health Sciences and Informatics (DHSI)
Research Director, Center for Population Health IT (CPHIT)
- 2008 – 2012 Assistant Professor
School of Informatics / Regenstrief Institute
Indiana University Purdue University Indianapolis
- 2005 – 2008 Research Associate
School of Medicine, School of Computer Sciences, School of Management
IWK Children Hospital, Dalhousie University, Halifax, Canada

■ Other Experience and Professional Memberships

- 2015 – Now Member, ONC HIE Measurement CoP
- 2012 – Now Member, Academy Health (AH) (HIT Interest Group Advisory Committee)
- 2005 – Now Member, American Medical Informatics Association (AMIA) (PHI Executive Committee)
- 2009 – Now Member, National Institute of Health Informatics (NIHI), Canada

■ Honors

- 2017 – 2018 Technology Transfer Award, Johns Hopkins University
- 2013 – 2014 Faculty Innovation Fund Award, Johns Hopkins University
- 2005 – 2009 Canadian Institute of Health Research Award, Dalhousie University (Canada)
- 2003 – 2005 Nova Scotia Graduate Student Award, Dalhousie University (Canada)

(C) Contribution to Science

■ Population Health Informatics & Risk Stratification

My current research focuses on the application and evaluation of Health-IT (HIT) solutions within the context of population health. My concentration within this context is informatics challenges of integrating health and non-health data (e.g. merging insurance claims and EHR data with social data) to improve population stratification and eventually enhance public health interventions and outcomes. My work has contributed to community health IT solutions, population-based decision support systems, and population-wide predictive models to forecast utilization. Some of my work has been devoted to the research and development of the Johns Hopkins ACG (acg.jhsph.org), which is considered one of the top patient-level population-wide risk prediction solutions globally. ACG system offers a unique approach to measuring morbidity that improves accuracy in evaluating provider performance, identifying patients at high risk, forecasting healthcare utilization and setting equitable payment rates. Billions of dollars per year are now routinely exchanged using ACGs in almost every US State and in 16 + nations. Over 700+ peer reviewed articles have been published that apply and evaluate ACGs:

- [1] Kan H, **Kharrazi H**, Leff B, Boyd C, Davison A, Chang H-Y, Kimura J, Wu S, Anzaldi LJ, Richards T, Lasser E, Weiner JP. Defining and assessing geriatric risk and associated health care utilization among elderly patients using claims and electronic health records. *Medical Care*. 2018; 56(3) 233-239
- [2] Chang HY, Richards T, Shermock KM, Elder-Dalpos S, ..., **Kharrazi H**. Evaluating the impact of prescription fill rates on risk stratification model performance. *Medical Care*. 2017; 55(12): 1052-1060
- [3] Hatem E, Lasser EC, **Kharrazi H**, Perman C, Montgomery R, Weiner JP. A population health measurement framework: evidence-based metrics for assessing community-level population health in the global budget

context. *Population Health Management*. 2017 [in-press]

- [4] **Kharrazi H**, Lehmann HP. Role of Population Health Informatics in Understanding Data, Information and Knowledge. Forthcoming in Joshi A (Ed.) *Population Health Informatics*. 2017; 65-89. Jones and Bartlett Learning. ISBN: 978-1-28-410396-0
- [5] Swain MJ, **Kharrazi H**. Feasibility of 30-day hospital readmission prediction modeling based on health information exchange data. *International Journal of Medical Informatics*. 2015; 84(12):1048-56
- [6] **Kharrazi H** & Weiner JP. IT-enabled community health interventions: Challenges, opportunities, and future directions. *Generating Evidence & Methods to Improve Patient Outcomes (eGEMs)*. 2014; 2(3): 1-9

■ **Public Health Informatics**

Population health IT/informatics overlaps considerably with public health. Prior to joining Johns Hopkins, my research at Indiana University was focused on the application of health IT innovation within the traditional public health research. My recent work in this area has propelled the notion of merging population health IT efforts and public health IT efforts:

- [1] **Kharrazi H**, Lasser E, Yasnoff WA, Loonsk J, Advani A, Lehmann H, Chin D, Weiner JP. A proposed national research and development agenda for population health informatics: Summary recommendations from a national expert workshop. *Journal of American Medical Informatics Association (JAMIA)*. 2017; 24(1):2-12
- [2] Wilcox HC, **Kharrazi H**, Wilson RF, Musci RJ, Susukida R, Gharghabi F, Zhang A, Wissow L, Robinson KA. Data linkage strategies to advance youth suicide prevention: a systematic review for a national institute of health pathways to prevention workshop. *Annals of Internal Medicine*. 2016; 165 (11): 779-785
- [3] Bae J, Ford EW, **Kharrazi H**, Huerta TR. Electronic medical record reminders and smoking cessation activities in primary care. *Addictive Behaviors*. 2017; 16(77): 203-209
- [4] Karami A, Dahl AA, Turner-McGrievy G, **Kharrazi H**, Shaw JG. Characterizing diabetes, diet, exercise, and obesity comments on Twitter. *International Journal of Information Management*. 2017; 38: 1-6
- [5] Dixon B, **Kharrazi H**, Lehman H. Public health and epidemiology informatics: Recent research and events. *Yearbook Medical Informatics*. 2015; 10(1): 199-206

■ **Consumer Health IT**

My research has also examined the adoption of established behavioral change models of health psychology in consumer health informatics solutions such as personal health records (PHRs) and health games for children. As the landscape in this domain was vaguely defined at the time, I also contributed to this domain with two systematic reviews for mobile PHRs and health games:

- [1] **Kharrazi H**, Chisholm R, VanNasdale D, Thompson B. Mobile personal health records: An evaluation of features and functionality. *International Journal of Medical Informatics*. 2012; 81(9): 579-593
- [2] **Kharrazi H**, Lu AS, Gharghabi F, Coleman W. A scoping review of health game research: Past, present, and future. *Games for Health Journal*. 2012; 1(2): 153-164
- [3] Gadde P, **Kharrazi H**, Patel H, MacDorman K. Toward monitoring and increasing exercise adherence in older adults by robotic intervention: A proof of concept study. *Journal of Robotics*. 2011; 1-11
- [4] BenMessaoud C, **Kharrazi H**, MacDorman K. Facilitators and barriers to adopting robotic-assisted surgery: contextualizing the unified theory of acceptance and use of technology. *Public Library of Sciences (PLOS) ONE*. 2011; 6(1): e16395

• **Complete List of Published Work in My Bibliography**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/10eHcnhXecnr/bibliograph/47953837/public/>

(D) Research Support

■ **Ongoing** (selected)

- **Addressing Suicide Research Gaps: Understanding Mortality Outcomes in the Mid-Atlantic Region**
H. Kharrazi (PI), H. Wilcox (Co-PI) 2018 – 2019 NIMH
- **Analytical Framework to Project BMI Trajectory for VHA Veteran at the Population Level**
H. Kharrazi (PI), J. Wiener (Co-PI) 2014 – 2019 Veteran Health Affairs
- **Geo-Social [Risk Prediction and Visualization] Analytic Platform (GSAP)**
H. Kharrazi (PI), J. Wiener (Co-PI) 2017 – 2019 DST Health Solutions
- **Baltimore Falls Reduction Initiative Engaging Neighborhoods and Data (B’FRIEND)**
H. Kharrazi (PI), J. Sharfstein (Co-PI) 2016 – 2018 RWJF DASH & JHU inHealth

■ **Completed** (recent)

- **Prescription Drug Monitoring Program’s Risk Modeling Project**
J. Weiner (PI), H. Kharrazi (Co-PI) 2015 – 2018 U.S. DoJ
- **Workforce Training to Educate Health Care Professionals in Health Information Technology**
H. Kharrazi (Co-PI), H. Lehmann (Co-PI) 2015 – 2017 DHHS ONC Health IT
- **Data Sources and Methods to Analyze Suicide Prevention Interventions among Youth**
K. Robinson (PI), H. Kharrazi (Co-I) 2015 – 2016 AHRQ EDC RFTO42
- **Care Coordination and Expanded Analytics Infrastructure of the All-Payer Demonstration Project**
J. Wiener (PI), H. Kharrazi (Co-PI) 2015 – 2016 Maryland DHMH
- **A Community HIE-based Hospital Readmission Risk Prediction & Notification System**
H. Kharrazi (PI) 2013 – 2015 AHRQ (R21HS022578-01)
- **Evaluation of Stage 3 Meaningful Use Objectives among Eligible Hospitals**
H. Kharrazi (PI) 2013 – 2015 AHRQ ACTIONII RFTO32
- **Methodology Standards Academic Curriculum: Comparative Effectiveness Research**
J. Segal (PI), H. Kharrazi (Co-I) 2015 – 2015 PCORI (PCO- MSSDT2014)
- **Discovery Fund Synergy Award**
C. Boyd (PI), H. Kharrazi (Co-I) 2014 – 2016 John Hopkins School of Medicine
- **Developing an Informatics Framework for the VHA Population Health Program**
J. Wiener (PI), H. Kharrazi (Co-PI) 2013 – 2014 Veteran Affairs
- **Utilizing Maryland’s HIE to Prototype a Readmission Prediction Model**
H. Kharrazi (PI) 2013-2014 JHU Faculty Innovation Fund
- **NIH Support for Scientific Meetings**
J. Wiener (PI), H. Kharrazi (Co-PI) 2014 – 2014 NLM (R13LM011955-01)
- **Clinical Knowledge Hub - Conceptual Integration of Rules, Data Sets, and Queries**
H. Kharrazi (PI), G. Schadow (Co-I) 2010 – 2012 NLM R01