



PARALLEL SESSION 3.2

ARTIFICIAL INTELLIGENCE AND DIGITAL HEALTH: OPPORTUNITIES AND RISKS

| BACKGROUND

Digital innovations and new technology hold much promise to revolutionize the delivery of health services and leapfrog development challenges to accelerate progress towards UHC. There is increasing evidence that artificial intelligence has the potential to improve population health, improve individual health outcomes, lower health system costs, improve the patient experience and interaction with the health system and her/his own health, and improve the health workforce experience with service delivery.

However, these innovations raise several important concerns. This includes the lack in volume and quality of data to enable unbiased machine learning algorithms; risk of overwhelming already fragile systems; issue of equitable access; the cost of these technologies and unreasonable intellectual property rights barriers; unlinked and fragmented technological systems; and importantly ethical concerns and risks regarding patients' confidentiality.

Knowing the right approach to take along the expansion path is challenging. Ensuring that countries make use of innovation and artificial intelligence (AI) in ways that supports their efforts to create client-centered health systems that can deliver on UHC will require wisdom and finesse.

This session will debate whether artificial intelligence and digital health innovations are ripe to leapfrog progress towards UHC in low- and middle-income countries, examining the potential opportunities but also the substantive risks.

| OBJECTIVES

- Share knowledge and experience about successful uses of digital health and analytical innovations in promoting UHC in LMICs
- Highlight policy implications, risks, obstacles, and ethical concerns involved in use of these approaches
- Engage the audience to actively participate, including interfacing with AI technologies



Moderator

Ashish Jha

Dean for Global Strategy

Harvard T.H. Chan School of Public Health
United States of America

OMB No. 0925-0001 and 0925-0002 (Rev. 09/17 Approved Through 03/31/2020)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.

Follow this format for each person. DO NOT EXCEED FIVE PAGES.

NAME: Ashish K. Jha

eRA COMMONS USER NAME (credential, e.g., agency login): AJHA12

POSITION TITLE: K.T. Li Professor of Health Policy, Harvard T.H. Chan School of Public Health, Director, Harvard Global Health Institute; Professor of Medicine, Harvard Medical School

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	Completion Date	FIELD OF STUDY
--------------------------	--------	-----------------	----------------

Columbia University, New York, NY	B.A.	1992	Economics
Harvard Medical School, Boston, MA	M.D.	1997	Medicine
Harvard School of Public Health M.P.H.		2004	Clinical Effectiveness

A. Personal Statement

I am a practicing physician, researcher, and Professor of Medicine at Harvard Medical School and the K.T. Li Professor of Global Health at the Harvard. T.H. Chan School of Public Health. As a researcher, my work has focused on four primary areas – (1) Public reporting, (2) Pay for performance and value-based care, (3) Health information technology, (4) Leadership – and the roles these play in effecting the delivery of safe, effective, patient-centered care. My research endeavors focus on improving the quality and costs of healthcare systems with a specialized focus on the impact of policies and improving health disparities. I have published over 200 empirical manuscripts on these topics. I am also a member of the National Academy of Medicine. Previously, I have also served as a Special Assistant to the VA Secretary General and have advised multiple governments in health policy and quality of care.

B. Positions and Honors

1997-1998	Internship, Internal Medicine, University of California, San Francisco
1998-2000	Residency, Internal Medicine, University of California, San Francisco
2000-2001	Chief Residency, Internal Medicine, University of California, San Francisco
2002-	Associate Physician, Brigham and Women's Hospital, Boston, MA
2004-	Staff Physician, VA Boston Healthcare System
2004-	Assistant Professor of Health Policy, Harvard School of Public Health
2005-	Assistant Professor of Medicine, Harvard Medical School
2007-	Senior advisor for quality and safety, Veterans Health Administration, Washington, DC
2009-2012	Associate Professor of Health Policy, Harvard School of Public Health
2013-	Professor of Health Policy, Harvard School of Public Health
2014-	Director, Harvard Global Health Institute
2014-	Professor of Medicine, Harvard Medical School
2017-	Senior Associate Dean, Harvard T.H. Chan School of Public Health

C. Contribution to Science

1. Disparities in Care: Disparities exist across many aspects of clinical care and can have a deleterious impact on the health outcomes of populations with social risk factors, such as race and ethnicity. In my work, I seek to understand the drivers of

poor quality of care among vulnerable populations primarily using data derived from Medicare.

- a) Figueroa JF, Zheng J, Orav EJ, Epstein AM, Jha AK. Medicare Program Associated With Narrowing Hospital Readmission Disparities Between Black And White Patients. *Health Affairs*. 2018 April; 37(4):654-661.
- b) Joynt KE, Jha AK. Characteristics of hospitals receiving penalties under the Hospital Readmissions Reduction Program. *JAMA*. 2013 Jan 23; 309(4):342-3. PMID: 23340629.
- c) Jha AK, Orav EJ, Epstein AM. Low-quality, high-cost hospitals, mainly in South, care for sharply higher shares of elderly black, Hispanic, and medicaid patients. *Health Aff (Millwood)*. 2011 Oct; 30(10):1904-11. PMID: 21976334.
- d) Jha AK, Epstein AM. Governance around quality of care at hospitals that disproportionately care for black patients. *J Gen Intern Med*. 2012 Mar; 27(3):297-303. PMID: 21948204; PMCID: PMC3286564.

2. Examining Quality of Care in U.S. This proposal requires an understanding of measuring quality of care in the U.S. I have substantial experience evaluating quality of care.

- a) Adler-Milstein J, Jha AK. HITECH Act Drove Large Gains in Hospital Electronic Health Record Adoption. *Health Affairs (Millwood)* 2017 Aug 1; 36(8): 1416-1422.
- b) Joynt KE, Harris Y, Orav EJ, Jha AK. Quality of Care and Patient Outcomes in Critical Access Rural Hospitals. *JAMA* 2011;306(1):45-52.
- c) Jha AK, Orav EJ, Zheng J, Epstein AM. Patients' Perception of Hospital Care in the United States. *N Engl J Med* 2008;359(18):1921-31.
- d) Burke LG, Frakt AB, Khullar D, Orav EJ, Jha AK. Association Between Teaching Status and Mortality in US Hospitals. *JAMA* 2017 May 23; 317(20): 2105-2113.

3. Examining Costs of Care: There is an increasing focus on reducing waste and controlling rising health care costs. I have worked on understanding drivers of high health spending in the U.S. and strategies to reduce unnecessary health care utilization.

- a) Figueroa JF, Joynt Maddox KE, Beaulieu N, Wild RC, Jha AK. Concentration of Potentially Preventable Spending Among High-Cost Medicare Subpopulations: An Observational Study. *Ann Intern Med*. 2017 Nov 21; 167(10):706-713.
- b) Papanicolaos I, Woskie LR, Jha AK. Health Care Spending in the United States and Other High-Income Countries. *JAMA* 2018 March 13; 319(10): 1024-1039.
- c) Tsai TC, Jha AK. Surgical-readmission rates and quality of care. *N Engl J Med*. 2013 Dec 19; 369(25):2460-1.
- d) Figueroa JF, Lyon Z, Zhou X, Grabowski DC, Jha AK. Persistence and Drivers of High-Cost Status Among Dual-Eligible Medicare and Medicaid Beneficiaries: An Observational Study. *Ann Intern Med*. 2018 Oct 16; 169(8):528-534.

4. Evaluation of public reporting and value-based care: In recent years, there is a growing shift for transparency in health and also an increasing shift from paying for volume to paying for value. In my work, we have examined whether some national efforts are working, including accountable care organizations.

- a) Jha AK, Joynt KE, Orav EJ, Epstein AM. The Long-Term Effect of Premier Pay for Performance on Patient Outcomes. *N Engl J Med* 2012; 366:1606-1615.
- b) Figueroa JF, Tsugawa Y, Zheng J, Orav EJ, Jha AK. Association between the Value-Based Purchasing pay for performance program and patient mortality in US hospitals: observational study. *BMJ*. 2016 05 09; 353:i2214.
- c) Jha AK, Orav EJ, Epstein AM. Public reporting of discharge planning and rates of readmissions. *N Engl J Med*. 2009 Dec 31; 361(27):2637-45.
- d) Lee GM, Kleinman K, Soumerai SB, Tse A, Cole D, Fridkin SK, Horan T, Platt R, Gay C, Kassler W, Goldmann DA, Jernigan J, Jha AK. Effect of nonpayment for preventable infections in U.S. hospitals. *N Engl J Med*. 2012 Oct 11; 367(15):1428-37.

My complete bibliography can be found at <http://www.ncbi.nlm.nih.gov/pubmed/?term=Jha+AK>.

D. Research Support
76391

04/15/2019 – 04/14/2020

Robert Wood Johnson Foundation

Developing a Research Agenda to Update Knowledge of the Social and Health-System Factors that Affect Health

2017-263684

The Bill and Melinda Gates Foundation

09/7/2017—06/30/2021

Towards Evidence-Based Health System Reform

Role: Co-Investigator

2018-373679

Climate Change Solutions Fund

01/15/2018—01/14/2020

Association of Extreme Weather Events and Healthcare Spending

1R21MD011701-01
09/26/2017—05/31/2019
NIH/NIMHD
Trends in Racial Disparities in Surgical Readmissions and Strategies to Narrow the Gap
Role: Primary Investigator

20171084
The Commonwealth Fund
06/30/2019
Using Segmentation and Data Analytics to Improve Care for High-Need, High-Cost Patients in ACOs
Role: Primary Investigator
01/01/2018 -

20181326
01/01/2018—05/31/2019
The Commonwealth Fund
Managing High-Need, High-Cost Patients: An International Perspective
Role: Primary Investigator

2017-0065
The John A. Hartford Foundation
07/01/2017 - 06/30/2019
Understanding Information Continuity and its Impact on Care for Older Adults
Role: Primary Investigator

Completed Research Support

20160620
The Commonwealth Fund
10/31/2018
Understanding Who Becomes and Remains High-Cost/High Need Over Time:
The Role of Mental Health and Social Factors
Role: Primary Investigator
05/01/2016 -

61569153-126906
07/01/2017—12/31/2017
Stanford
Bright Spots in Care Deliver to High-Need, High-Cost Patients

MED17P0035111
09/30/2017
Medicare Payment Advisory Commission (MedPAC)
Phase 2 of development of healthy days at home population-level quality measure
Role: Primary Investigator
06/20/2015 -

2014-0136
10/31/2017
The John A. Hartford Foundation
Understanding Health IT-Enabled Performance Improvement for Older Adults
Role: Primary Investigator
06/01/2015 -

6979247
06/30/2017
Association of American Medical Colleges
Understanding the Value of Academic Medical Centers
Role: Primary Investigator
07/01/2015 -

2015-EBO-310
04/30/2016
The Rockefeller Foundation
An Independent Panel on the Global Response to Ebola
Role: Primary Investigator
06/01/2015 -

15032
Peterson Center on Healthcare
11/01/2014 - 08/31/2016

High Cost/High Risk Patients
Role: Primary Investigator

RX Foundation
12/31/2015
The Impact of Insurance Expansion on Medicaid Patients
Role: Primary Investigator

01/01/2014 -

620140227
04/30/2016
The Commonwealth Fund
Care Utilization and Spending Patterns for High-Cost Medicare
Role: Primary Investigator

12/01/2013 -

12-04749
01/01/2013 - 05/31/2016
Blue Cross Blue Shield of Massachusetts Foundation
Understanding High-Cost Patients in Massachusetts
Role: Primary Investigator

1 R01 HL113567
NIH/National Heart, Lung, and Blood Institute
Identifying Ways to Reduce Readmissions Among Minority-Serving U.S. Hospitals
Role: Primary Investigator

04/01/2012 - 03/31/2016

1 R01 MD006230
NIH/NIMHD
Understanding Disparities in Patient-Centered Hospital Care
Role: Primary Investigator

04/01/2012 - 12/31/2016