MAULIK MAJMUDAR, M.D.

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Dr. Maulik Majmudar is an experienced healthcare executive with broad expertise in care delivery transformation and medical device development. He has spent his entire career at the intersection of healthcare technology and care delivery. In addition to his domain expertise in clinical medicine and cardiology, he has demonstrated leadership and management experience in the areas of product management, clinical operations, clinical trials, medical and regulatory affairs, as well as go-to-market strategy at various organizations, including innovative startups (Biofourmis), Fortune 5 retail tech companies (Amazon), and internationally recognized academic medical centers (Mass General Brigham). He is a member of the Advisory Council for ARPA-H and actively participated in the selection of the key focus areas. He is also a member of the CEO's Strategic Council at SwissRe.

Maulik was integral part of founding the Healthcare Transformation Lab at MGH in 2013, one of the first digital health innovation programs in the country, long before 'digital health' became a mainstream industry. Here, he was responsible for identification, clinical validation, and implementation of digital health solutions to improve care delivery as well as provider and patient experience. He was awarded an education grant from the Aetna Foundation to start a 'clinician innovator' training program targeted at residents, fellows, and junior faculty. Furthermore, he led several industry-sponsored clinical trials with the goal of validating the performance and/or dissemination of novel devices in clinical care settings.

Maulik was recruited to Amazon as Chief Medical Officer of a stealth initiative within Amazon Devices. He was part of the team that developed and launched Amazon's first health and wellness service, Amazon Halo. He played an instrumental role in product development as well as business development and go-to-market strategy for Amazon Halo. In his role as the Medical Officer, Maulik played an integral role in hiring other medical directors and medical officers for other businesses across Amazon Health. He was also part of an internal task force focused on regulatory strategy for medical device development within Amazon Devices.

As a cofounder and chief medical officer at Biofourmis, Maulik has broad scope and influence over the strategic direction as well as day to day operations of the company. He currently oversees product management, clinical operations, and clinical affairs functions at Biofourmis, which serve both the care delivery and life sciences business verticals. After joining Biofourmis, Maulik significantly expanded the scope of the company's offering from primary a technology platform to a comprehensive care delivery business, that included providers and in-home clinical services. He hired the team to build the clinical operations function, including establishing medical practices, hiring clinical staff, and securing payor contracts. Maulik also led the initial go-to-market strategy and commercialization efforts to risk bearing organizations, including health plans and risk-bearing provider groups.

Maulik also leads the clinical affairs function and was responsible for development and clinical validation of multiple software as medical device products that ultimately received FDA 510k clearances as well as FDA's breakthrough device designation. His team recently led and completed the pivotal clinical trial that is planned to undergo FDA 510k de novo submission in 2025.

EDUCATION

09/96 – 05/99	B.Sc.; University of Maryland, College Park, MD
08/00 – 12/04	M.D.; Northwestern University Feinberg School of Medicine, Chicago, IL
07/05 – 07/06	Internship in Internal Medicine; The Johns Hopkins Hospital, Baltimore, MD
07/05 – 06/08	Residency in Internal Medicine; The Johns Hopkins Hospital, Baltimore, MD
07/08 – 06/09	Fellow, Duke Cardiovascular Magnetic Resonance Center Duke University Medical Center, Durham, NC
07/09 – 06/13	Fellow, Division of Cardiovascular Medicine, Department of Medicine Brigham and Women's Hospital, Harvard Medical School, Boston, MA
07/11–06/13	Post-doctoral Fellow, Molecular Imaging Research, Center for Systems Biology Massachusetts General Hospital, Harvard Medical School, Boston, MA

CURRENT POSITIONS

Apr 2021 – present	Co-Founder and Chief Medical Officer, Biofourmis

PAST POSITIONS

Aug 2018-Mar 2021	Chief Medical Officer, Amazon Halo, Amazon
July 2013-Nov 2018	Associate Director, Healthcare Transformation Lab, Mass General Hospital (MGH) Cardiologist, Corrigan Minehan Heart Center, MGH
Jan 2018-Nov 2018	Assistant Professor, Harvard Medical School
Aug 2014-Nov 2018	Lecturer, Harvard-MIT Health Sciences & Technology Program Massachusetts Institute of Technology, Cambridge, MA
May 2018-Nov 2018	Visiting Scientist, IMES, Massachusetts Institute of Technology (MIT)
Oct 2012-Feb 2016	Chief Clinical Officer and Founding Member, Quanttus, Inc.
July 2013-Dec 2014	Faculty, Division of Cardiology, VA Boston Healthcare System, Boston, MA

INDUSTRY AFFILIATIONS

June 2023-present	Advisory Council, **ARPA-H**, Washington DC
Oct 2020-present	Strategic Council, **SwissRe**, Zurich, Switzerland
July 2014-present	Medical Advisor, **Hi-Labs**, Silver Spring, MD
Jan 2017-Dec 2020	Clinical Advisor, **FruitStreet**, New York, NY
July 2016-2021	Clinical Advisor, **Biofourmis**, Singapore
May 2018-2018	Clinical Advisor, **Wavelet**, San Francisco, CA
June 2016-2018	Scientific Advisor, **Cardiogram**, San Francisco, CA
January 2015-2018	Consultant & Advisor, **EchoSense**, Israel
June 2016-Dec 2017	Consultant, **Facebook**, Menlo Park, CA
March 2016-Dec 2017	Consultant, **Nokia**, Espoo, Finland
May 2016-Dec 2017	Consultant, **HUINNO**, Waltham, MA
Mar 2016-Dec 2016	Consultant, **MC10**, Lexington, MA

May 2014-Dec 2016 Clinical Advisory Board, **AliveCor**, San Fransisco, CA

Aug 2014-April 2015 Medical Advisor, **Curely**, San Fransisco, CA

LEADERSHIP ROLES

Jan 2016-2018 Founding Editor, Ranked Health, Hacking Medicine Institute, Cambridge, MA

July 2016-2019 Board Member, ACC Innovation Advisory Group, ACC, Washington DC
Co-Chair, Innovation Working Group, ACC, Washington DC

PATENTS

United States Patent 20040005555
Rapid PCR-based blood test for detection of bacteremia.

United States Patent Application 62/ 485,698
Noninvasive assessment of anatomic vessels.

TEACHING

2016-2018 **Medical Device Development**, Co-Faculty
Massachusetts Institute of Technology, Cambridge, MA

2014-2018 **Healthcare Ventures**, Co-Faculty
Massachusetts Institute of Technology, Cambridge, MA

2014-2015 **Engineering Health**, Lecturer
Media Lab, Massachusetts Institute of Technology, Cambridge, MA

2010-2013 **Harvard Medical School**, **Boston, MA**
Clinical preceptor for cardiovascular examination part of the physical exam skills course for first, second-, and third-year medical students at HMS.

HEALTHCARE INNOVATION

2012 - 2016 **Medical Device Design; CIMIT/ MIT 2.75, MIT, Cambridge, MA**
Led a team of undergraduate and graduate students towards developing:
a) Non-invasive device for at-home monitoring of fluid status in patients with heart failure (2012); b) Novel cooling device for rapid induction of therapeutic hypothermia (2013); c) Wearable cardioverter-defibrillator (2014); d) Novel device for quantitative assessment of frailty (2015); e) Device for bedside assessment of intravascular volume status (2016).

2012-2013 **Tenacity, Co-Founder, Cambridge, MA**
A mobile health technology start-up focused on improvement of patients with diabetes, based on an incentive-based, peer reward program. Finalist team in the Healthbox Accelerator Program

PUBLICATIONS

Murton OM, Dec GW, Hillman RE, et al. Acoustic Voice Acoustic Voice and Speech Biomarkers of Treatment Status during Hospitalization for Acute Decompensated Heart Failure. App Sci. 2023; 13(3):1827.

Pettinati MJ, Lajevardi-Khosh A, Rajput KS, et al. Towards Remote Continuous Monitoring of Cytokine Release Syndrome. Annu Int Conf IEEE Eng Med Biol Soc. 2022: 966-70.

Huang N, Bian D, Zhou M, Mehta P, et al. Pulse Rate Guided Oxygen Saturation Monitoring Using a Wearable Armband Sensor. Annu Int Conf IEEE Eng Med Biol Soc. 2022: 4303-4307.

Sharma P, Jalali A, **Majmudar M**, et al. Deep-Learning based Sleep Apnea Detection using SpO2 and Pulse Rate. Annu Int Conf IEEE Eng Med Biol Soc. 2022: 2611-2614.

Majmudar MD, Chandra S, Yakkala K, et al. Smartphone camera-based assessment of adiposity: a validation study. NPJ Digital Med. 2022; 29:79.

Jung OS, Jackson J, **Majmudar M**, et al. Engaging frontline employees using innovation contests: Lessons from Massachusetts General Hospital. Healthc (Amst) 2022; 10:100615

Bhardwaj V, Spaulding EM, Marvel FA, et al. Cost-effectiveness of a Digital Health Intervention for Acute Myocardial Infarction Recovery. Med Care 2021; 59:1023-30.

Marvel FA, Spaulding EM, Lee MA et al. Digital Health Intervention in Acute Myocardial Infarction. Circ CV Qual Outcomes. 2021; 14:e007741

Un KC, Wong CK, Lau YM, et al. Observational study on wearable biosensors and machine-learning based remote monitoring of Covid-19 patients. *Sci Reports*. 2021; 11:4388

Carter J, Bababekov YJ, **Majmudar MD**. Training for our digital future: a human-centerd design approach to graduate medical education for aspiring clinician innovators. *NPJ Digit Med*. 2018; 1:26

Dur O, Rhoades C, Ng MS, et al. Design Rationale and Performance Evaluation of the Wavelet Health Wristband: Benchtop Validation of a Wrist-Worn Physiological Signal Recorder. *JMIR Mhealth UHealth*. 2018; 6:e11040.

Singh R, Jaffe A, Frydman GH, et al. Noninvasive Assessment of Jugular Venous Pressure via Force-Coupled Single Crystal Ultrasound. *IEEE Trans Biomed Eng*. 2018; 65;1705.

Sharma A, Harrington RA, McClellan MB, et al. Using Digital Health Technology to Better Generate Evidence and Deliver Evidence-based Care. *J Am Coll Cardiol*. 2018; 71:2680.

Gubin TA, Iyer HP, Liew SN, et al. A Systems Approach to Healthcare Innovation Using the Hacking Medicine Model. *Cell Syst*. 2017; 5:6.

Majmudar MD and Dy Aungst T. Telemedicine in Heart Failure – Ineffective or Just Ill Used? *JAMA Intern Med* 2016; 176:1035

Majmudar MD, et al. The Clinician Innovator: A New Career Path in Academic Medicine. *JAHA 2015*; 4:e001990

Majmudar MD, Colucci LA, Landman AB. The Quantified patient of the future: opportunities and challenges. *Healthcare 2015*; 3:153

Majmudar MD, Murthy VK, Shah RV, et al. Incremental prognostic value of coronary flow reserve among patients with cardiomyopathy. Eur Heart J Cardiovasc Imaging 2015.

Liong M, Im H, **Majmudar MD**, et al. Magnetic ligation method for quantitative detection of microRNAs. *Adv Healthc Mater* 2014; 3:1015

Majmudar MD, Keliher EJ, Heidt T, et al. Monocyte-directed RNAi targeting CCR2 improves infarct healing in atherosclerosis-prone mice. *Circulation* 2013.

Majmudar MD, Yoo J, Keliher EJ, et al. Hybrid PET/MR imaging of inflammation in atherosclerotic plaques using a novel dextran nanoparticle. *Circ Res* 2013.

Ueno T, Dutta P, Keliher E, Leuschner F, **Majmudar M**, Marinelli B, et al. Nanoparticle PET-CT detects rejection and immunomodulation in cardiac allografts. *Circ Cardiovasc Imaging* 2013; 6:568-73.

Dutta P, Courties G, Wei Y, et al. Myocardial infarction accelerates atherosclerosis. *Nature* 2012; 487: 325-9.

Majmudar MD and Nahrendorf M. Cardiovascular Molecular Imaging: The Road Ahead. *J Nuc Med* 2012; 53(5): 673-6.

Senthilkumar A, **Majmudar MD**, Shenoy C, et al. Identifying the etiology: a systemic approach using delayed enhancement cardiac magnetic resonance. *Heart Fail Clin* 2009; 5:349-67.

Majmudar MD, Tompkins C, Bachmann J, et al. Effects of lipid altering therapies on ventricular arrhythmias and sudden cardiac death. *Cardiol Rev* 2008; 17: 60-9.

Bachmann JM, **Majmudar M**, Tompkins C, et al. Lipid-altering therapy and atrial fibrillation. *Cardiol Rev* 2008; 16:197-204.

Moens AL, Takimoto E, Tocchetti CG, et al. Reversal of Cardiac Hypertrophy and Fibrosis From Pressure Overload by Tetrahydrobiopterin: Efficacy of Recoupling Nitric Oxide Synthase as a Therapeutic Strategy. *Circulation* 2008; 117:2626-36.

Rothman RE, **Majmudar MD**, Kelen GD, et al. Detection of bacteremia in emergency department patients at risk for infective endocarditis using universal 16S rRNA primers in a decontaminated polymerase chain reaction assay. *J Infect Dis*. 2002; 186:1677-81.