WHARTON HEALTH CARE CLUB

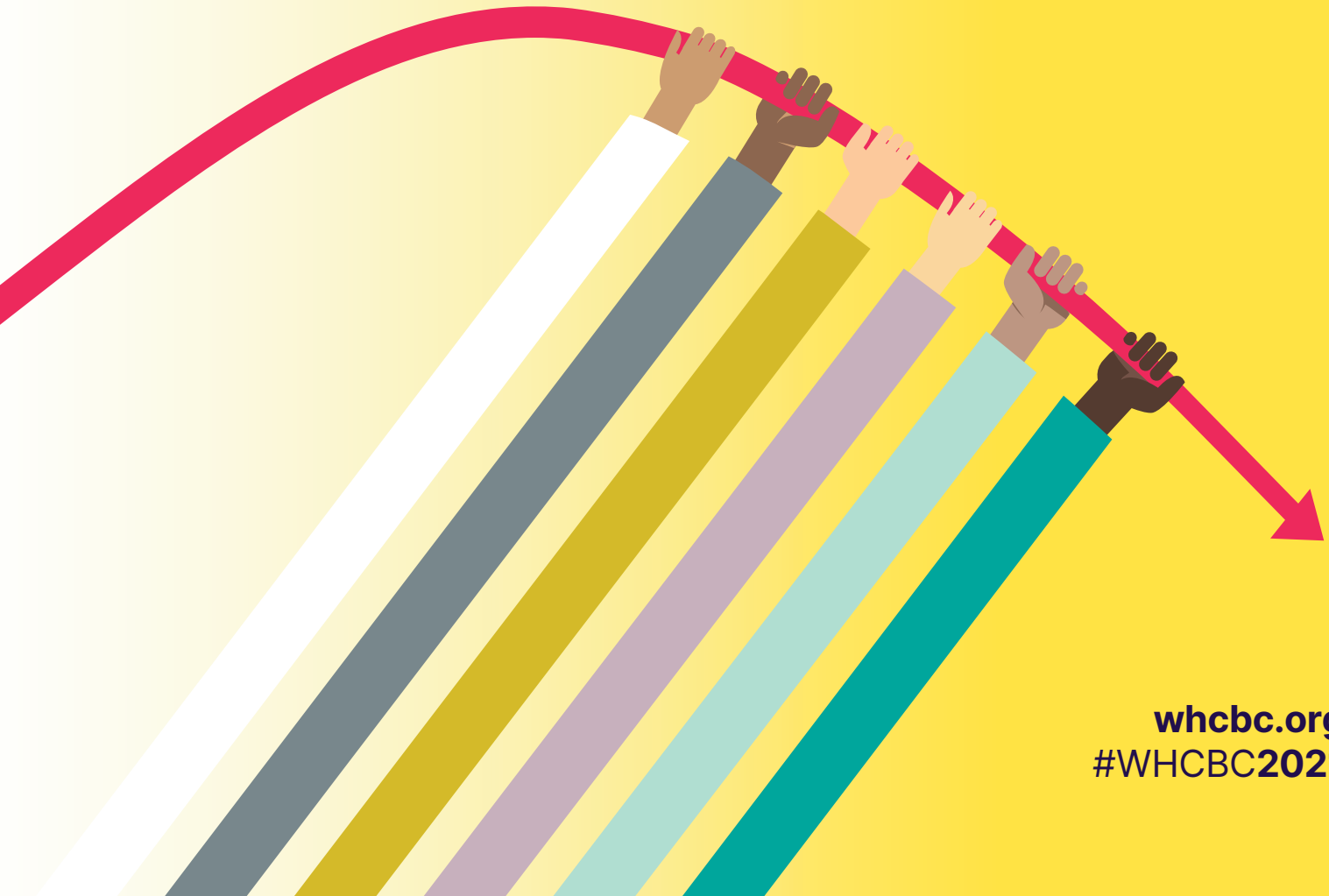
Wharton University of Pennsylvania STUDENT INITIATIVE

THE PULSE
interviews inside

REDRAWING THE CURVE

New Paradigms in Health Care

February 18–19 2021



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THE PULSE

The Pulse is Wharton's student-run health care journal. For 15+ years, this annual publication has been distributed to attendees of the annual Wharton Health Care Business Conference. The Pulse Blog is our online version, which includes exclusive online interviews and multimedia publications.

The goal of The Pulse is to inform the health care business community of notable developments across the industry and engage opinion leaders in a thought-provoking dialogue that is of value to our readers.

The Pulse's online blog includes exclusive online interviews and publications.

whcbc.org/pulse/

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2021 Agenda

Welcome to the 27th annual conference! Challenges—old and new—push health care players to go back to the drawing board and disrupt the norm. The magnitude and complexity of this task continues to spark innovation throughout the industry, with the goal of creating a new and more equitable normal that better serves all health care stakeholders. Join us at this year's conference to exchange experiences across sectors and understand how key leaders are working to create new paradigms in health care.

Thursday, February 18, 2021

5:30 PM–5:45 PM ET	Welcome Comments, Explanation of Theme
5:45 PM–6:30 PM ET	Keynote 1: **Glen Tullman - Founder & Executive Chairman, Livongo Health** Interviewed by **Bradley Fluegel**
6:30 PM–6:45 PM ET	Keynote 1 Q&A
6:45 PM–7:30 PM ET	**Health Care Inequities Roundtable** Sponsored by MERCK
7:30 PM–8:00 PM ET	Roundtable Q&A

Friday, February 19, 2021

7:00 AM–7:30 AM ET	Yoga Class by Philly's **Maha Yoga Studio**
7:35 AM–8:10 AM ET	**Barry's Bootcamp** Workout
8:15 AM–8:45 AM ET	Guided Meditation by **The Sukhi Project**
9:00 AM–10:00 AM ET	Sponsor Networking
10:00 AM–10:15 AM ET	Welcome Comments
10:15 AM–11:00 AM ET	Keynote 2: **Toni Hoover, PhD - Director of Strategy Planning and Management for Global Health, Bill & Melinda Gates Foundation**
11:00 AM–11:10 AM ET	Keynote 2 Q&A
11:10 AM–11:15 AM ET	Break and Panel Breakouts

11:15 AM–12:10 PM ET	Panel 1: **Clinical Trials at Warp Speed** **Biopharma**	Panel 2: **Investing During a Pandemic and a Recession** **Investing**
12:10 PM–12:15 PM ET	Break and Reconvene	
12:15 PM–1:00 PM ET	Keynote 3: **Julie Louise Gerberding, MD, MPH - Executive Vice President and Chief Patient Officer, Merck & Co., Inc.** Interviewed by **J. Stephen Morrison**	
1:00 PM–1:10 PM ET	Keynote 3 Q&A	
1:10 PM–1:15 PM ET	Break and Panel Breakouts	
1:15 PM–2:10 PM ET	Panel 3: **Artificial Intelligence Enabling the Transformation of Hospital Systems** **Payor Provider #2** Sponsored by athenahealth	Panel 4: **Hype for Hospital at Home** **Payor Provider #1**
2:10 PM–2:15 PM ET	Break and Reconvene	
2:15 PM–3:00 PM ET	Keynote 4: **Donald M. Berwick, MD, MPP, FRCP, KBE - President and CEO, Institute for Health Care Improvement (IHI)** Interviewed by **John Barkett (WG'09)**	
3:00 PM–3:10 PM ET	Keynote 4 Q&A	
3:10 PM–3:15 PM ET	Break	
3:15 PM–4:10 PM ET	Panel 5: **The Covid Catalyst for Digital Health Adoption** **Digital Health**	Panel 6: **Advocating for Access: Reform Amidst a Global Pandemic** **Policy**
4:10 PM–4:15 PM ET	Break and Reconvene	
4:15 PM–5:00 PM ET	Keynote 5 **Wyatt W. Decker, MD, MBA - CEO, OptumHealth** Interviewed by **Rachel Werner, MD, PhD**	
5:00 PM–5:10 PM ET	Keynote 5 Q&A	
5:10 PM ET	Closing Remarks	

Note: Time may be subject to change.

LILLY FOR BETTER LIVES

Our work extends beyond the medicines we create. Together, we're working to improve health and access to life-saving medicines in our local communities and around the globe. Through partnerships and our signature volunteer programs, we aim to identify and promote successful solutions to health issues that can be scaled and replicated to make life better for people here at home and around the world.

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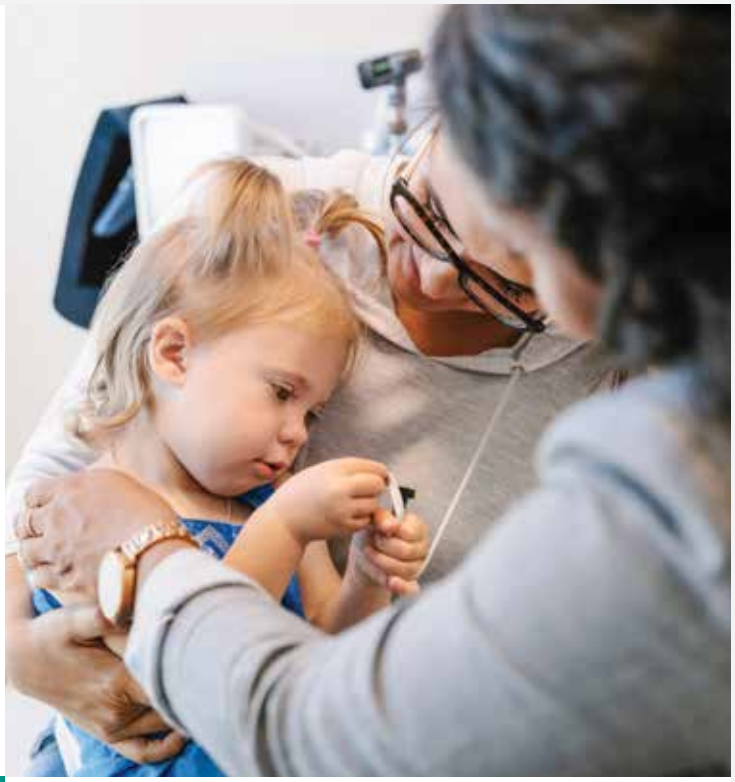

Welcome from the Co-Chairs

Dear WHCBC Community,

Life took a big turn in 2020. Like many of you, we turned to our community as a constant during these uncontrollable times. Despite the changed format of this year's conference, we are more excited than ever about the opportunity for new beginnings, meaningful connections, thoughtful discussions, and lasting reflections.

Planning a virtual conference provided new challenges. As co-chairs, we appreciate the privilege of our positions to shape this forum. We took it as an opportunity to expand our reach to speakers and attendees. Our approach this year reflects our obligations to push the boundaries of the conversation in light of the intensified strain on the health care system and exacerbated health inequities. We believe this virtual community can be larger and more connected than ever, and we look forward to conversations across disparities in health outcomes, digital health adoption, and associated policy reform.

This past year's events have inspired an even stronger desire to strengthen our industry, and we hope to foster these conversations during this year's conference. Thank you for being a part of it.

Thank you,

2021 Conference Co-chairs
Emily Arfman, Ben Berman, Tory Gentry, Kyle Herman, Anna Irving, Kenny Kasper, Nirali Sampat, Mosum Shah

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Keynote 1

Thursday, February 18, 2021 - 5:45 PM–6:30 PM ET

Glen Tullman

Founder & Executive Chairman, **Livongo Health**
Managing Partner, **7wireVentures**

Glen Tullman is the Founder and former Executive Chairman and Chief Executive Officer of Livongo Health, the first at-scale consumer digital health company to truly empower people with chronic conditions to live better and healthier lives using data science.

In his final year, Tullman led Livongo through the largest consumer digital health Initial Public Offering in history, a secondary offering, a convertible debt offering that raised over $550 million, and the industry's largest merger to date between Livongo and Teladoc Health, valuing Livongo at $18.5 billion and beginning a new era of consumer centric virtual care. A visionary leader and entrepreneur, Tullman previously ran two other public companies that changed the way health care is delivered. During his time as Chief Executive Officer of Allscripts, the Company was the leading provider of electronic prescribing, practice management, and electronic health records. Glen led Allscripts IPO and Secondary offerings. Prior to Allscripts, he was Chief Executive Officer of Enterprise Systems, which he also took public and then sold to McKesson/HBOC. Before entering health care, Tullman served as President and COO of CCC Information Systems, a provider of computerized systems for the property and casualty insurance sector.

Tullman is one of two Founding Partners at 7wireVentures, one of the highest returning venture capital funds in Illinois. He is the author of *On Our Terms: Empowering the New Health Consumer*, in which he proposes new solutions to address the chronic-condition epidemic facing our country.

Glen is dedicated to finding a cure for diabetes and other chronic conditions—and to keeping people healthy until these cures are found. A strong proponent of philanthropy, he was honored in 2019 with a Robert F. Kennedy Human Rights Ripple of Hope Award for his career focused on improving the safety, empathy, and efficiency of our health care system. He also serves as a Chancellor to the International Board of the Juvenile Diabetes Research Foundation and as a Board Member of the American Diabetes Association. Tullman has three amazing children that inspire him every day.

Glen Tullman will be interviewed by Bradley Fluegel

Bradley Fluegel

Principal, **BMF Advisors**
Lecturer, **The Wharton School**

Brad Fluegel currently advises health care organizations, entrepreneurs, and other participants in health care. He was most recently the senior vice president - chief healthcare commercial market development officer for Walgreens. Brad was responsible for all commercial healthcare activities, including sales and contracting, biopharma relationships, retail clinics, clinical affairs, new service development and market planning. Previously, he was Chief Strategy and Business Development officer for Walgreens, responsible for corporate strategy and business development.

Brad joined Walgreens in October 2012 after previously serving as executive in residence at Health Evolution Partners. Before that he was chief strategy and external affairs officer of Anthem, where he was responsible for long-term strategic planning, government affairs, corporate communications including public relations, corporate marketing, corporate development, international expansion, innovation and new business ventures.

Prior to Anthem, Brad was senior vice president of national accounts and vice president, enterprise strategy at Aetna. Earlier, Brad was CEO for Reden & Anders (Optum Consulting) and Tillinghast-Towers Perrin, a clinical, actuarial and management consulting practice that served all sectors of the health care industry. While there, he negotiated the sale of Tillinghast Health to Optum. He also held several roles in strategy, planning and product development and management at Harvard Community Health Plan and organized and led audits, feasibility studies and related projects for health care clients at Arthur Andersen & Co.

Brad currently serves on the Board of Directors of Metropolitan Jewish Health System in New York City, Performant Financial Corporation, Fitbit (until its recent sale to Google), Premera Blue Cross, Alight Solutions and AdhereHealth. He also advises several health care companies and private equity firms.

Brad earned a master's degree in public policy from Harvard University's Kennedy School of Government and a bachelor of arts in business administration from the University of Washington. He also serves as a lecturer at the University of Pennsylvania's Wharton School of Business..

Keynote 2

Friday, February 19, 2021 - 10:15 AM–11:00 AM ET

Toni Hoover, PhD

Director of Strategy Planning and Management for Global Health

Bill & Melinda Gates Foundation

Dr. Toni Hoover, Director of Strategy Planning and Management for Global Health at the Bill & Melinda Gates Foundation, leads a team that is responsible for business strategy and operations, portfolio and project management, and engagement with the pharmaceutical industry and product development partners. Her team works to create more opportunities to consistently deliver high impact interventions for global health solutions by integrating the network of diverse partners involved in product development. She is also currently contributing to the national COVID-19 response as an advisor to The Fight Is In Us, a coalition of academic research institutions, pharmaceutical companies, non-profits, foundations, civil society, and technology companies to increase the supply of COVID-19 convalescent plasma for transfusion and for the development of a hyperimmune globulin product.

Before joining the foundation in 2012, Toni was Senior Vice President and Site Director at Pfizer Worldwide Research and Development, overseeing the operations of the company's largest R&D laboratories located in Groton, Connecticut. She is a 25-year veteran of pharmaceutical R&D product development and management where she held positions in clinical research and operations, project and portfolio management, and laboratory and facilities management. While at Pfizer she led the global development of Lyrica® from exploratory development through early commercialization.

Toni is originally from New Orleans, Louisiana. She received her A.B., A.M. and Ph.D. in Psychology and Social Relations from Harvard University. She is a member of the Board of Directors for Sonoma Biotherapeutics. She also serves on several not-for profit boards, including the University of Washington Medical Center (Seattle), the Joyce Theater (NYC) and the Pacific Northwest Ballet (Seattle).

Keynote 3

Friday, February 19, 2021 - 12:15 PM–1:00 PM ET

Julie Louise Gerberding, MD, MPH

Executive Vice President and Chief Patient Officer

Merck & Co., Inc.

Dr. Julie Gerberding is Executive Vice President and Chief Patient Officer at Merck & Co., Inc., where she is responsible for a broad portfolio focused on patient engagement, strategic communications, global public policy, population health and corporate responsibility. She joined Merck in 2010 as president of Merck vaccines

Previously, Dr. Gerberding was Director of the U.S. CDC, where she led the agency through 40+ emergency responses to public health crises. She serves on the Boards of Biotechnology Innovation Organization (BIO), Cerner Corporation and the MSD Wellcome Trust Hilleman Laboratories, a non-profit that develops new technologies for developing countries.

Dr. Gerberding has received more than 50 awards and honors, including the United States Department of Health and Human Services (DHHS) Distinguished Service Award for her leadership in responses to anthrax bioterrorism and the September 11, 2001 attacks. In 2018, she was selected as the Health Care Businesswomen Association's Woman of the Year and received the Lifetime Achievement Award from eyeforpharma.

Dr. Gerberding received her undergraduate and M.D. degrees from Case Western Reserve University. She completed her internship and residency in Internal Medicine and fellowship in Clinical Pharmacology and Infectious Diseases at the University of California, San Francisco, where she is currently an Adjunct Associate Professor of Medicine. Dr. Gerberding received a Masters of Public Health at the University of California, Berkeley. She is a member of the National Academy of Medicine and a fellow of the Infectious Diseases Society of America and the American College of Physicians. She is board certified in Internal Medicine and Infectious Diseases.

Julie Louise Gerberding, MD, MPH will be interviewed by J. Stephen Morrison

J. Stephen Morrison

Senior Vice President

Center for Strategic and International Studies (CSIS)

J. Stephen Morrison is a Senior Vice President at the Center for Strategic and International Studies (CSIS) in Washington D.C., where he founded and directs its Global Health Policy Center. A political scientist, he has built at CSIS over the past two decades a highly dynamic and impactful program that concentrates on the geopolitical and national security dimensions of U.S. leadership in international health, with a special emphasis upon the centrality of bipartisanship and multilateral institutions, partnerships with private industry, foundations, advocates and the faith community, and long-term strategic planning and commitments. Through a series of high-level commissions which he has created and directed, he has spearheaded work that has shaped concrete decisions in Congress and the administration on HIV/AIDS, malaria, and tuberculosis, reproductive health and gender equality, immunizations, and health security, including pandemic preparedness, acceleration of technological innovations, and coping with anti-science and a polluted digital world.

For the past three years (and again in 2021), he has led global health security fora at the annual Munich Security Conference. In recent years he has also directed and produced documentary films, most notably The New Barbarianism, an award-winning examination of the surge of violence against the health sector, with original footage from Syria, Yemen and Afghanistan. He is currently completing a five-part docu-series, The Pandemic Paradox: HIV on the Edge, a critical look at sustaining progress against this 40-year old pandemic, in the midst now of Covid-19. In 2020, his podcast series, Coronavirus Crisis Update, has featured over 70 episodes with a highly diverse array of prominent leaders.

In 2021, he leads the CSIS Commission on Strengthening America's Health Security, focused on restoring U.S. global leadership in the Covid-19 era and addressing vaccine nationalism, geostrategic competition with China, Russia and others, and the looming gap in vaccine access in low and middle income countries. Over the course of the year, the Commission will issue new recommendations on U.S. diplomatic capacities and long-range U.S. health security strategy, options to mitigate fiscal insolvency in the developing world, reform of the Centers for Disease Prevention and Control (CDC) and the future contributions of the Department of Defense. Together with Professor Heidi Larson of the London School of Hygiene and Tropical Medicine, he co-chairs the CSIS High-Level Panel on Vaccine Confidence and Misinformation, which is charged with developing concrete measure to reverse the decline in Americans' trust in science and vaccines.

Keynote 4

Friday, February 19, 2021 - 2:15 PM–3:00 PM ET

Donald M. Berwick, MD, MPP, FRCP, KBE

President and CEO, **Institute for Health Care Improvement (IHI)**
Former Administrator, **CMS**

Donald M. Berwick, MD, MPP, FRCP, KBE, is President Emeritus and Senior Fellow at the Institute for Health Care Improvement (IHI), an organization he co-founded and led as President and CEO for 19 years. He is one of the nation's leading authorities on health care quality and improvement. In July, 2010, President Obama appointed Dr. Berwick to the position of Administrator of the Centers for Medicare and Medicaid Services (CMS), which he held until December, 2011.

A pediatrician by background, Dr. Berwick has served as Clinical Professor of Pediatrics and Health Care Policy at the Harvard Medical School, Professor of Health Policy and Management at the Harvard School of Public Health, and as a member of the staffs of Boston's Children's Hospital Medical Center, Massachusetts General Hospital, and the Brigham and Women's Hospital. He has also served as vice chair of the U.S. Preventive Services Task Force, the first "Independent Member" of the Board of Trustees of the American Hospital Association, and chair of the National Advisory Council of the Agency for Health Care Research and Quality. He is an elected member of the American Philosophical Society, the American Academy of Arts and Sciences, and the National Academy of Medicine (formerly the Institute of Medicine).

Dr. Berwick served two terms on the IOM's governing Council and was a member of the IOM's Global Health Board. He served on President Clinton's Advisory Commission on Consumer Protection and Quality in the Health Care Industry. His numerous awards include the 2007 William B. Graham Prize for Health Services Research, the 2006 John M. Eisenberg Patient Safety and Quality Award, and the 2007 Heinz Award for Public Policy. In 2005, he was appointed Honourary Knight Commander of the British Empire by Her Majesty Queen Elizabeth II, the highest honor in the UK for non-UK citizens. He is the author or co-author of over 200 scientific articles and six books. He also serves now as Lecturer in the Department of Health Care Policy at Harvard Medical School.

Donald M. Berwick, MD, MPP, FRCP, KBE will be interviewed by John Barkett

John Barkett (WG'09)

Senior Director of Policy Affairs

Willis Towers Watson

John Barkett is the Senior Director of Policy Affairs for Willis Towers Watson. John is responsible for strategy and development related to federal and state health policy, as well as the product development and marketing of Willis Towers Watson's various marketplace solutions. He previously worked for Extend Health, the nation's largest private Medicare exchange, before it was acquired by Towers Watson in 2012. (Towers Watson merged with Willis in 2016.)

Before joining Extend Health, John spent two and a half years in Washington, D.C., where he contributed to the writing, passage, and implementation of the Patient Protection and Affordable Care Act. John served on the health subcommittee staff of the Ways and Means Committee in the House of Representatives in 2009 where he drafted and negotiated the final details of legislation aimed at reducing fraud in the Medicare program. After the bill's passage, John joined the staff of the Office of Health Reform in the Department of Health and Human Services, where he helped guide the implementation of all sections of the Affordable Care Act related to delivery system reform.

Previously, John worked for athenahealth, Inc., a revenue-cycle management and electronic medical record company, and Medica HealthCare Plans, Inc., a Medicare Advantage plan.

John earned an MBA in Health Care Management from the Wharton School of the University of Pennsylvania, where he won the Robert D. Eilers Award for healthcare innovation and service to the community. He graduated cum laude from Harvard College, with a bachelor's degree in economics and a secondary field in healthcare policy.

Keynote 5

Friday, February 19, 2021 - 4:15 PM–5:00 PM ET

Wyatt W. Decker, MD, MBA

CEO

OptumHealth

Wyatt Decker, MD, MBA, joined Optum in 2019. In his role as chief executive officer of OptumHealth, Dr. Decker oversees the care delivery and ambulatory care capabilities of OptumCare, as well as major platforms serving Behavioral Health, Population Health, Complex Care, and consumer offerings at Optum. He is leveraging the full value of Optum's distinctive assets in data, analytics, technology and clinical expertise to improve the health outcomes and experiences for the millions of people receiving care in local care systems and everywhere Optum serves consumers and patients.

Prior to joining Optum, Dr. Decker served for more than two decades at Mayo Clinic, one of the largest not-for-profit, academic health systems in the U.S. He most recently held the dual role of chief medical information officer for Mayo Clinic, and CEO of Mayo Clinic in Arizona. At Mayo Clinic, Dr. Decker pioneered the use of innovative digital technologies, including telemedicine and AI, to deliver health care expertise to affiliated care providers nationwide, as well as leading the digital strategy around engaging and empowering patients.

Under his leadership, Mayo Clinic in Arizona was named the number one safest teaching hospital in the U.S., the number one hospital in Arizona by U.S. News and World Report, and achieved the highest possible CMS ratings for both patient quality and patient experience. He oversaw the launch of the Mayo Clinic Alix School of Medicine's Arizona campus, and the building of an advanced, National Cancer Institute-designated Cancer Center.

Dr. Decker also has served as a Professor of Emergency Medicine at the Mayo Clinic College of Medicine, and directed the Emergency Medicine Residency Training program at Mayo Clinic.

Dr. Decker holds an MD from Mayo Clinic Alix School of Medicine and an MBA from Kellogg School of Management, Northwestern University and a Bachelor of Science from University of California, Santa Cruz.

Wyatt W. Decker, MD, MBA will be interviewed by Rachel Werner, MD, PhD

Rachel Werner, MD, PhD

Executive Director

Leonard Davis Institute of Health Economics

Dr. Werner, MD, PhD is the Executive Director of the Leonard Davis Institute of Health Economics. She is Professor of Medicine at the University of Pennsylvania Perelman School of Medicine as well as the Robert D. Eilers Professor of Health Care Management at the Wharton School and a practicing physician at the Philadelphia VA.

Over the last 15 years, Dr. Werner has built a foundational research program examining the effects of health care policies on health care delivery, using methods designed to draw causal inference from observational data. She has investigated the unintended consequences of quality improvement incentives, and was among the first to recognize that public reporting of quality information may worsen racial disparities.

Her research has been published in high-impact peer-reviewed journals, including JAMA, Health Services Research, and Health Affairs. Beyond publication, Dr. Werner has influenced research and policy as a member of numerous advisory committees to the state and federal government as well as research foundations. She is a Core Investigator with the VA HSR&D Center for Health Equity Research and Promotion (CHERP), and directs one of four national centers to evaluate the effectiveness of the VA's medical home.

Dr. Werner has received numerous awards for her work, including the Alice Hersh New Investigator Award from AcademyHealth, the Presidential Early Career Award for Scientists and Engineers, and the American Federation of Medical Research (AFMR) Outstanding Investigator Award. She is an elected member of the National Academy of Medicine.

She received her undergraduate degree from Macalester College, and her medical degree and doctoral degree in health economics from the University of Pennsylvania.

Health Care Inequities Roundtable

Thursday, February 18, 2021 - 6:45 PM–7:30 PM ET

This event brought to you by MERCK

Our Thursday evening executive roundtable will discuss the vast inequities that plague our healthcare system. Disparities in access and outcomes for underserved populations have been a long-standing challenge - and one that has become even more evident in 2020 through the pandemic. Inequities in social determinants of health have put minority groups at higher risk for illness while also preventing them from accessing quality care. This panel will showcase a discussion by leaders that are taking steps to create a more equitable and inclusive healthcare system.

A.G. Breitenstein

Founder & CEO

Folx Health

A.G. is the founder and CEO of Folx Health, the first digital-native health platform designed specifically for the Queer Community. A.G. is a mission-driven health care operator, investor and entrepreneur - she has founded and led multiple startups and a VC firm all aimed at building a better, more affordable and equitable health care system.

A.G. was formerly a co-founder and partner at Optum Ventures. Prior to Optum Ventures, A.G. was a co-founder and chief product officer of Humedica, serving as chief product officer of Optum Analytics after Optum acquired Humedica in 2013. Prior to Humedica, A.G. was a director at Leerink Swann, a leading health care investment bank; co-founded the non-profit Institute for Health Metrics (IHM); served as co-chair of Governor Charlie Baker's Digital Health Data Working Group; and served as chair of the Massachusetts Work Group on the Privacy of Medical Records. She began her career as an attorney and was the founding director of the Health Law Institute which focused on the health needs of GLBTQ youth working the streets of Boston. A.G. received her MPH from Harvard University, her JD from the University of Connecticut, and her bachelor's degree from Yale University.

Abner Mason

Founder & CEO

ConsejoSano

Before creating ConsejoSano, Abner was Founder and CEO for the Workplace Wellness Council of Mexico, now the leading corporate wellness company in Mexico. From 2003-2008, he was founder and Executive Director of AIDS Responsibility Project, driving the creation of CONAES and JaBCHA, the first business councils on HIV/AIDS in Mexico and Jamaica. Abner previously served as Chairman of the International Committee and member of the Presidential Advisory Council on HIV/AIDS (PACHA), appointed by President Bush in 2002.

Nzinga A. Harrison, MD, DFAPA

Co-Founder and Chief Medical Officer

Eleanor Health

Nzinga A. Harrison, MD, DFAPA is the Co-Founder and Chief Medical Officer of Eleanor Health, an innovative, value-based provider of mental health medical homes for individuals affected by substance misuse and substance use disorders. Harrison leads strategic clinical development, oversees care model fidelity, outcomes and quality, and drives data-driven clinical and business practices for the organization.

Previously, Harrison served in Chief Medical Officer, Senior VP and Medical Director roles in quasi-governmental, governmental and non-profit organizations, designing and implementing new programs and launching new markets designed to serve individuals with addiction, other mental health and intellectual disabilities. She serves as clinical adjunct faculty in the Morehouse School of Medicine Department of Psychiatry, is Co-Founder of Physicians for Criminal Justice Reform, and Campaign Psychiatrist for Let's Get Mentally Fit, a public stigma reduction campaign.

Harrison received her MD degree from University of Pennsylvania School of Medicine. She completed her internship and residency in general psychiatry at Emory University in Atlanta, GA. She is a member of the American Psychiatric Association and serves on the American Society of Addiction Medicine's Practice Management and Regulatory Affairs Committee.

Atheendar Venkataramani, MD, PhD

Assistant Professor, Department of Medical Ethics and Health Policy,

Perelman School of Medicine

General Internist, **University of Pennsylvania Presbyterian Medical Center**

(Moderator)

Atheendar Venkataramani, MD, PhD, is an Assistant Professor in the Department of Medical Ethics and Health Policy at the Perelman School of Medicine and a board-certified general internist at the University of Pennsylvania Presbyterian Medical Center. His research focuses on the life-course origins of health and socioeconomic inequality. His work examines (1) the effect of economic opportunities and the policies that influence them on health behaviors and outcomes; (2) the effects of early life interventions on adult health and well-being, and the mechanisms underlying these links; and (3) the role of social policies and structural factors in shaping population health, Dr. Venkataramani obtained his PhD in Health Policy (Economics) from Yale University in 2009 and his MD from Washington University in St Louis in 2011. He completed his residency in Internal Medicine-Global Primary Care at the Massachusetts General Hospital (MGH) in 2015.

NAVIGATING LEADERSHIP

AN INTERVIEW WITH CASTLIGHT HEALTH'S MAEVE O'MEARA

Maeve O'Meara became CEO of Castlight Health, a healthcare navigation company, in July 2019. Since then, she has led the company through a transformation and a global pandemic. *The Pulse* sat down with Maeve to learn about her decade-long experience working at Castlight, the company's evolution before and during the COVID-19 pandemic, and her advice to aspiring healthcare and women leaders.

Maeve O'Meara

CEO

Castlight Health

Maeve O'Meara's passion for healthcare developed at an early age. "Growing up in a relatively small town, my understanding of jobs in healthcare more broadly was non-existent. I thought my only option was to become a doctor, which is what I initially wanted to do," she says. She graduated from the University of Virginia and initially planned to join the Perelman School of Medicine at the University of Pennsylvania. Before matriculating to medical school, however, she took a management consulting job with Bain & Company, where she worked in the healthcare technology group. It was there and in her subsequent role in venture capital where she says she learned about the intersection of healthcare and technology and the broad impact it could have on people.

After graduating from Stanford's Graduate School of Business, Maeve joined Castlight Health as a product manager, a job she was initially rejected from. "I applied a second time," she says, "because I was really excited about what the company could be." Castlight Health (NYSE: CSLT) began as a price transparency platform 10 years ago. Since then the company has evolved into a leader in healthcare navigation, delivering a highly personalized employee health and wellbeing benefits experience for Fortune 500 customers. As Maeve puts it, Castlight is shifting paradigms in healthcare in two ways. For employers, Castlight provides the infrastructure to help them make decisions around plan design and specific areas of healthcare spend in order to "best serve their employees and take on challenges specific to their populations." For employees and their families, Maeve says: "It's about helping them easily connect and engage with the right programs and care, at the right time. This drives improved outcomes, a better member experience, and lower costs. It's about enabling, empowering, and guiding people to better care."

Prior to becoming CEO in 2019, Maeve held several roles at Castlight over the last decade, including product management, analytics, and customer experience. She attributes her deep understanding of the company and

> "As CEO, you will fail if you are engaged in everything. It is all about choices and where you spend your time."

ability to wear different hats to her roots in product management. "Coming out of Stanford where there is a focus on technology, it was clear to me that strategy and product had to live together," she says. "Product management touches every single function and, in my opinion, gives you a birds-eye view of the company."

Maeve admits "it's pretty unusual" these days to stay at a company as long as she has, but many others on her team have been at the company for 10 years as well. Knowing the ins and outs of the company means she has a lot of opinions, but she says she often tries to keep them to herself. "I am a believer in empowerment," she says, "and as CEO, you will fail if you are engaged in everything. It is all about choices and where you spend your time."

During the pandemic, Castlight has literally been guiding people to care with the launch of their COVID-19 Test Site

> "Healthcare was already complicated and opaque. What has been stunning is that the complexity has increased as opposed to decreased over the last twelve months."

"There are studies on the need for female leaders to take risks in order to advance, and [recognizing] this is something that has helped me personally."

Finder, which quickly became the most comprehensive testing database in the country. "Healthcare was already complicated and opaque. What has been stunning is that the complexity has increased as opposed to decreased over the last twelve months," says Maeve. At the onset of the pandemic, the company recognized the need to help people navigate the confusion around COVID-19 testing locations and quickly pulled a team together to build and launch the search tool within weeks. In addition to the right technology, creating (and now maintaining) the test site finder site required significant manual work, including regularly calling individual sites to confirm information in a constantly changing environment. Despite this, team members from across the company's departments came together to work on the test site finder, recognizing its importance. Today, the tool is integrated into Google search, used by innovative companies such as Forward, and utilized by state health departments, including the New York State Department of Health.

When asked about how else COVID-19 has impacted Castlight's path forward, Maeve highlights three major changes, among many, affecting care navigation: increased adoption and awareness of virtual care, a build-up of deferred care, and a spotlight on the need to treat vulnerable populations in a different, more personalized way. Readiness to adopt virtual care, broadly defined to include telemedicine and digital point solutions focused on areas like behavioral health or diabetes, dramatically increased in 2020. "That really broadens the set of choices that people are making about how they take care of themselves outside of the traditional bricks and mortar system," Maeve says. Using their platform, Castlight helped employers to launch program management campaigns and target populations to see how they might better support employees who benefit from these virtual solutions. Based on their own claims data, the company also published several studies related to deferred care, including cancer screenings and pediatric vaccinations, during the pandemic. "There are a lot of unknowns," says Maeve, "especially about the consequences of things like missed vaccinations or screenings. It's really important from a data perspective to know who that population is." Using their broad database, Castlight is also able to help employers identify vulnerable populations, such as those with underlying chronic conditions or gaps in medication and help communicate to them what to do in the case of COVID-19.

As a new CEO faced with the COVID-19 pandemic, Maeve says she is lucky to be at a company where she is surrounded by smart people and feels incredibly supported by the company's board. Despite the company being in a transformation phase since she took over as CEO, the team was still able to achieve their four primary goals for 2020, one of which was building out their health plans business. "We had set those goals," she says, "and they were not going to change. It was how we were going to achieve them that needed to change. If I were choosing my first year as a CEO, it would not have been at the top of my list to expect a pandemic," she laughs. "I was very fortunate to have the support I needed and separately to be in an industry where there is enough opportunity to really adapt and find new ways to still achieve your goals."

It is not lost on Maeve that beyond being the CEO during a tumultuous year, she is also one of the few female CEOs in healthcare. Women represent fewer than 15% of healthcare CEOs and less than 35% of the industry's C-suite. Maeve's advice to women aspiring to be in positions like hers is to find mentors and managers invested in your growth and career. She says having a strong network of supporters as a female leader was particularly important as it allowed her to take risks and have resiliency through difficult situations. "There are studies on the need for female leaders to take risks in order to advance, and [recognizing] this is something that has helped me personally." She also suggests always trying to work on what is most important for the company. "Running to the fire, you are always going to find yourself amongst people that have done the same," she says. "Fire situations are when the bonding occurs and relationships develop."

Maeve says her other observation since becoming CEO is many women aspire to be leaders and have a seat at the table, but don't necessarily see themselves as CEOs or vocalize that goal. "It was never an explicit or even secret goal for me," she says. "What that has translated to for me is an increased sense of responsibility to rising women leaders to help mentor them and help them see a growth path that does not include artificial boundaries or ceilings, which unfortunately is still very often the case. I'm incredibly lucky to have had mentors and managers who helped me rise to this role, and I would like to be doing the same."

A decade-long tenure also means Maeve had a front row seat to the company's growth journey. "There is just so much education that comes from each phase," she says. "When you are in hypergrowth it's about the balance of alignment between sales and product. Going through an acquisition – we purchased Jiff in 2017 – some of the learnings there you read in a book, but they don't translate the same in real life. And then when you are in a transformation, and an incredibly visible one, you really learn how to motivate people and how to motivate yourself." When asked what motivates her to stay in healthcare she says: "I have devoted all of my career to this space, and there is still so much work to be done, but it really feels like we are starting to have some breakthrough moments. Especially at Castlight, I have the opportunity to see and hear how we impact the employees, their families, and health plan members. Those are very real and personal stories. When you stay close to the impact, it's easy to stay motivated."

"I have the opportunity to see and hear how we impact the employees, their families, and health plan members. Those are very real and personal stories. When you stay close to the impact, it's easy to stay motivated."

Based on an interview by Poorwa Godbole, January 2021.

CHALLENGING THE STATUS QUO

A CONVERSATION WITH IORA HEALTH CEO RUSHIKA FERNANDOPULLE

Founded over a decade ago, Iora Health is a consumer-centric, technology-enabled provider working to "Restore Humanity to Health Care." The company is using multidisciplinary teams to rebuild healthcare from the ground up, leveraging primary care to improve population health. Today, they focus primarily on Medicare Advantage populations, and their model has been proven to reduce hospitalizations, ER visits, and specialty care costs. *The Pulse* sat down with CEO Rushika Fernandopulle to learn more about the company's history, vision, and response to the COVID-19 pandemic.

Rushika Fernandopulle, MD

CEO

Iora Health

***The Pulse*: Can you please share a brief overview of your background and how you started Iora?**

Rushika Fernandopulle: I am a primary care doctor. I went into medicine because I wanted to help heal people. When I got into the wards during medical school, I realized how screwed up the system was. Despite the really good science and tools we have, the way we deliver to people is awful. I had been a government major in college and realized that we built the system, so we can fix the system. I wanted to go do something, so I first thought I would go get an MBA. This was before most MBA programs, and I was literally told by people at Harvard's medical school, "Look, son, you can be one of us or one of them." It felt like business was the dark side, and if I went, I would not be welcome back. I ended up going to the Kennedy School for a Master of Public Policy, which was "acceptable," but was able to cross register for a number of business school classes.

I did that, and I do still practice as a primary care doctor, while also trying to fix the system. I started thinking about how to build a new system of healthcare and realized instead of starting top down from hospitals, we should start closest to the consumer with primary care and build up from there.

At the time I was running an inter-faculty health policy program at Harvard. On Harvard's dime, I was able to find people who are doing cool things in primary care, brainstorm, and build a model that we thought would work better. The focus of these new models was really centered around relationships rather than transactions. Last I checked, that's what heals people.

As an entrepreneur you come to this moment where you say, "I am a doctor, I can start my own practice. I'm going to quit the day job, take a second mortgage on the house, open a practice, and try to do this." So, in 2004, 16 years ago, I opened a practice called Renaissance Health, the rebirth of primary care. By the way, bad idea, because I can't spell "renaissance" and neither can anyone else, but it sounded cool at the time. We started with 1 little practice in Arlington and now, as Iora, we have 47 practices across the country. About 10 years ago, we started raising some capital, and now we are trying to build these practices all over.

> "The premise of Iora is we are going to harness capitalism to solve a social problem."

***The Pulse*: Do you have advice for others in healthcare who want to raise capital?**

RF: The premise of Iora is we are going to harness capitalism to solve a social problem. All these people futzing around at non-profits where they have to spend a year getting a forty-thousand-dollar grant from RWJ is a waste of time. We are taking on a three and a half trillion-dollar system! Let's raise capital. We have raised three hundred and fifty million dollars because we are taking on a huge system.

You have to raise capital from the right people who are in sync with your values. You have to decide you are not going to do evil things like surprise billing. Don't do that and don't take money from people who make you do that.

> "The focus of these new models was really centered around relationships rather than transactions. Last I checked, that's what heals people."

"The enemy is the status quo, not any of us."

You also need to have a long-term time horizon. I've been doing this for 16 years; one of the big problems with US Capitalism is this short-term thinking – quarterly profit statements, annual reports. In the end, the only way to improve healthcare is to make people healthier. That doesn't happen when you snap your fingers. It's about building relationships and changing behavior. Education is the same thing. The environment is the same thing. All the big problems we have, we can harness capitalism to solve, if we are able to have longer time horizons.

***The Pulse*: Iora's model is built on team-based, value-based, and technology-enabled care. These are all huge buzz words in primary care today, and your model is proven to reduce hospitalizations and improve patient engagement. So why aren't all providers doing the same thing? What makes Iora's model challenging to implement, and how did you overcome those challenges?**

RF: The vision of care that Iora has, similar to what you said, is radically consumer-centric, value-based, and digital. It's completely different from today's system. You can't do it halfway. What's hard is to get a business model that works. The story over and over again in healthcare is someone comes up with a better way to do things like reduce readmissions, and then they get fired because they lowered revenue for their institution. That's sort of the way it is.

What we've done at Iora is align everything around what we want to do. The space, teams, IT system, salary model, payment model, everything is different. It's all aligned around improving people's health and keeping them out of trouble, not traditional fee-for-service treatment.

***The Pulse*: On that note, there are a few other organizations – Oak Street Health, Cityblock – trying to achieve a similar mission to Iora's. Iora was one of the first players innovating in primary care and has been a leader for a long time. What sets Iora apart?**

RF: First of all we don't see each other as competitors, we see each other as fellow travelers. So Iyah Romm from Cityblock, Mike Pykosz from Oak Street, Chris Chen from ChenMed, we are all friends. If you add all of us up, you get a couple percentage points of the market. We are tiny, so the enemy is the status quo, not any of us. If you look at many of the things that we all do, we do things very similarly. We build our own technology, do full-risk models, build teams, integrate behavioral health, and deal with social determinants of health. We do it because it's the right thing to do.

We do all have different flavors. At Iora we focus on three things. First, we lead with our clinical model. Maybe it's because we are run by a doctor and many of the other groups are not. If you are a physician, you lead with a clinical model. Our clinical model is deeply thought-through and has evolved over 16 years. For instance, we have health coaches. A health coach's job is to engage with patients and help them change behavior in their life.

Secondly, we focus a ton on consumer experience. Our roots were in direct primary care. When I started 16 years ago, no payer would give us the time of day, so we had to be retail. People would pay us $40 per month. If they ever didn't have a good experience, they would quit and stop paying us. One of our earliest investors at Iora was Tony Hsieh, rest his soul, from Zappos, and he was a board member for several years. Incredible customer service is deep in our DNA.

Thirdly, we made a deep bet on building our technology from the ground up. It's tempting to build on top of an existing EHR, but that's like building a house on a shaky foundation. Those EHRs were never built for this. They were built to document, code, and bill higher, not manage populations and people, engage patients and families, or track and improve performance.

Those are the three things that set us apart: our clinical model, being consumer-centric, and a focus on from-the-ground-up technology.

***The Pulse*: On the note of technology, Iora also has its own collaborative care platform called Chirp. Can you tell us a little bit more about this product? How does it compare to a traditional EHR?**

RF: By the way, an Iora is a bird from Sri Lanka, which is where I'm from originally. It's called Chirp for a reason. We

don't think of it as an EHR. We use it as our EHR, but it's really a care collaboration platform. An EHR is a tool for you to record what you do in a visit and then bill as high as you can; it's a cash register. The great news is we don't care about that because we don't bill per visit. What we need is a tool that helps us engage patients and manage populations. It's really a CRM that helps us track relationships.

We are also trying to get data from everywhere. In our model, we are at full risk, so I don't get paid just for telling you what to do. I only get paid if you actually take your blood pressure medicine, stop eating salt, and don't get your stroke, because then you don't go to the hospital. It's a very different problem to solve. They are solving how to bill as much as they can for patients, as opposed to how to improve health for the population.

We need to collect data from patients, and we also need data from the world – your lab values, whether you are filling your pharmacy scripts, whether you went to the hospital. If any of our patients show up in a hospital or an ER, it alerts us. We then talk about them in our morning huddle and send a team to go see the patient in the hospital. If it turns out you are not filling your medication, we will ask your health coach to reach out and figure out what happened. That's how you change behavior, and that's what we've built. An IT platform, linked to a process model, linked to a people and culture.

***The Pulse*: Of course, COVID-19 has had a huge impact on all types of healthcare providers. This spring, Iora was a leader in shifting over most care to virtual delivery and continuing to stay connected to patients. Especially given that the majority of your patients are over 65, what were the major changes you had to make in response to COVID-19 and how will these impact your model in the long-run?**

RF: We, like everyone else right when COVID hit in the middle of March, said we need to change how we practice. We need to keep our staff and patients safe. We made the decision to leave all our physical practices open because this is the biggest health problem and we are doctors; we should do that. We shifted to 93% virtual encounters literally overnight.

We also proactively called every one of our patients within the first 2 weeks. One-on-one, every single patient, and said, "I know you are hearing from your red-state governor that you should go to the tattoo parlor and the beach. He doesn't mean you. You are old and sick, and you need to stay home. We are open 24/7. Come or call us anytime. Do you have enough food? Do you have enough medicine? Do you understand?" Shockingly, in the first 4 months of the pandemic, only 11% of Americans heard one word from their doctor. I think that's an embarrassment. We advocated, and because of that, our COVID hospitalization rate was half of what it is nationally. We saved lives doing that.

"Shockingly, in the first 4 months of the pandemic, only 11% of Americans heard one word from their doctor. I think that's an embarrassment. We advocated, and because of that, our COVID hospitalization rate was half of what it is nationally. We saved lives doing that."

We then transitioned very quickly from phone to video. We have older, sicker people, so many of them needed help with video. We evolved all sorts of things. We had tablet delivery programs where a health coach would go to their house, hand them a tablet, and teach them how to use it. We FedExed tablets to people and paid for their bandwidth. We did whatever it took to be able to manage people better. At peak, 70% of our encounters were by video.

Many people did something like that, but then as soon as they could, they went back to in-person visits because that's what they could bill for. If all that happens from this pandemic is we do something temporarily and go back to the way we were, we have missed an opportunity. We are never going back.

We think what is right is an omnichannel delivery model. We do 30,000 chats or emails per month with our patients. We,

of course, can see you in the practice if we need to. 40% of our synchronous encounters are now in person. 60% are done through telemedicine because it's the right thing to do. And then we have a home visit team for about 4% of our encounters. We are going to keep our visits to under 50% because we think over 50% can be done without a visit, and that's better. COVID is an opportunity for us to do the right thing.

***The Pulse*: This year's conference theme is "Redrawing the Curve: New Paradigms in Healthcare." Iora is clearly pushing several paradigms. What would you say are the key ways in which Iora is changing primary care and healthcare overall?**

RF: The first is this idea of high-impact, relationship-based care. We need to shift our healthcare system from being a transactional model to being a relationship-based model, and we are showing how that's done.

Number two is really moving to true value-based care. A lot of people say the words, but then they mean they are going to get a little bonus while still doing fee-for-service.

Third is focusing on the experience for patients. Value-based care is a little bit of a red herring. It is only important in that it helps pay for creating a different experience for patients and doctors.

Fourth is the idea that the technology ought to work for us, not the other way around. Too often the tail is wagging the dog. We need to have technology solutions that do what we want to do, not make it harder for us to do the right thing.

And finally, this idea that we are a venture-backed for-profit that is trying to change the world. This false dichotomy of you can do good things and be a non-profit or do evil things and be a for-profit is ridiculous. There is such an opportunity for all of us to harness capitalism. We can amass capital to solve real social problems and do it at scale. We can challenge the status quo, as opposed to begging and pleading for the system to change. That's another paradigm we are shifting.

Interviewed by Poorwa Godbole, December 2020. Full interview available at ***whcbc.org/pulse/****.*

Panel 1: Clinical Trials at Warp Speed

Friday, February 19, 2021 - 11:15 AM–12:10 PM ET **Biopharma**

The clinical trial landscape is rapidly changing as sponsors and regulators seek better ways to measure clinical impact and get therapies to patients faster. Covid-19 has challenged and forced modifications of the clinical trial process. Novel trial designs, technology, and collaboration are speeding new products through development. Our panelists will discuss this changing landscape, address how recent advances can help shorten time to commercialization, increase yield, and improve diversity in clinical trial recruitment.

Cartier Esham, PhD

Chief Scientific Officer and EVP of Emerging Companies

Biotechnology Innovation Organization

Cartier Esham serves as Chief Scientific Officer and EVP of Emerging Companies at the Biotechnology Innovation Organization (BIO). In this role, Dr. Esham manages and directs BIO's policy development, advocacy, research and educational initiatives for BIO's emerging companies, which comprise approximately 90% of BIO's membership. This includes capital formation policy and health policy impacting emerging companies, as well as research and analysis of the biopharmaceutical industry and life-science investment and financing. Among the priorities of BIO's Emerging Companies Section are: promoting a science-based FDA regulatory environment; supporting NIH funding and programs/initiatives such as SBIR and NCATS that promote the effective transfer of technology; and working to create a public and private market environment that incentivizes the research and development of innovative treatments and therapies. Prior to joining BIO, Dr. Esham was a Vice President and Director of Research at Dutko Worldwide, a private consulting firm in Washington, D.C. There she worked on a variety of environmental, education, science, technology and health care-related issues both on the federal and state/local levels. Esham has a Ph.D. in Microbiology from the University of Georgia, a Master's degree in Marine Biology from the University of North Carolina at Wilmington and a Bachelor of Science Degree from the University of Kentucky. She has published papers in peer-reviewed scientific journals on water quality, marine microbial ecology, and bacterial phylogeny.

Ted W. Love, MD

President & Chief Executive Officer

GBT

Dr. Love is president and chief executive officer of GBT and has with broad leadership and management experience in the biopharmaceutical industry. Before joining GBT in 2014, he was executive vice president, research and development and technical operations, at Onyx Pharmaceuticals, Inc., where he played an instrumental role in initiating and completing several of Onyx's first Phase 3 clinical trials. Prior to Onyx, Dr. Love served as president, chief executive officer and chairman of Nuvelo, Inc., where he led growth of the company to a market capitalization of $1 billion. Prior to that, he

served as senior vice president, development, at Theravance, Inc. Earlier in his career, Dr. Love held a number of senior management positions in medical affairs and product development at Genentech, where he served as chairman of Genentech's Product Development Committee.

He currently serves on the boards of directors of Seattle Genetics Inc., Royalty Pharma plc, and the Biotechnology Innovation Organization (BIO), for which he serves as chair of the Emerging Companies Section. Dr. Love holds a B.A. in molecular biology from Haverford College and an M.D. from Yale Medical School. He completed a residency in internal medicine and a fellowship in cardiology at the Massachusetts General Hospital.

Merdad Parsey, MD, PhD

Chief Medical Officer

Gilead

Merdad Parsey, MD, PhD is Gilead's Chief Medical Officer, responsible for overseeing the company's global clinical development and medical affairs organizations. In his role, Merdad supervises all clinical trials and development operations. Together with the leadership team, he works to advance clinical development strategies and programs with the goal of changing the trajectory of disease, and transforming care for the patients of today and tomorrow.

Merdad joined Gilead in 2019, after serving as Senior Vice President of Early Clinical Development at Genentech, where he led clinical development for areas including inflammation, oncology and infectious diseases. Prior to Genentech, Merdad served as President and CEO of 3-V Biosciences (now Sagimet BioSciences), held development roles at Sepracor, Regeneron and Merck and was Assistant Professor of Medicine and Director of Critical Care Medicine at the New York University School of Medicine.

He completed his MD and PhD at the University of Maryland, Baltimore, his residency in Internal Medicine at Stanford University and his fellowship in Pulmonary and Critical Care Medicine at the University of Colorado. Merdad currently serves on the Board of Directors for Sagimet BioSciences.

Ryan Richardson

Chief Strategy Officer

BioNTech

Ryan Richardson is BioNTech's Chief Strategy Officer. He brings more than 15 years of experience in the finance and health care industries to BioNTech. Prior to joining BioNTech in 2018 as SVP Corporate Development & Strategy, Ryan was an Executive Director in the Global Health Care Investment Banking team at J.P. Morgan in London, where he advised companies in the biotech and life sciences industry on M&A, equity and debt capital financings. Earlier in his career, Ryan spent five years as a Management Consultant to biopharmaceutical companies in the U.S. and Europe,

where he worked on a wide range of strategic and operational projects in the areas of commercial strategy, pricing and market access, new product planning, and R&D operations. Ryan holds an MBA from the University Of Chicago Booth School Of Business, an MSc from the London School of Economics, and a BS in Biology from the University of Kansas.

Gaurav Shah, MD

CEO & President

Rocket Pharma

Dr. Shah is the founding Chief Executive Officer and President of Rocket Pharma (October 2015) (Nasdaq: RCKT), with a pipeline comprised of first-in-class gene therapies for rare and devasting inherited genetic diseases. Rocket has five disease focused programs: Fanconi Anemia (FA), Leukocyte Adhesion Deficiency (LAD-I), Danon Disease, Pyruvate Kinase Deficiency (PKD) and Infantile Malignant Osteopetrosis (IMO). Each program is intended to be transformative, enabling not only reversal of the disorder at molecular and cellular levels, but sustained relief from debilitating and potentially life-threatening symptoms. A projected goal of having all five approved gene therapies by 2025.

Prior to this role, Gaurav was Global Program Head in the Cell & Gene Therapies Unit at Novartis, where he had strategic oversight of 12 functions and helped spearhead pivotal trials with CART-19 for patients with leukemia and lymphoma. Dr. Shah started his career in industry at ImClone/Eli Lilly as a Medical Director overseeing oncology trials focused on monoclonal antibodies. He graduated from Harvard College with a degree in behavioral neuroscience. He received his M.D. from Columbia, completed his internal medicine residency at Brigham and Women's Hospital, and hematology/oncology fellowship training at Memorial-Sloan Kettering. After receiving board certification in medical oncology, he served as an Adjunct Assistant Professor of Oncology at Columbia.

Meg Tirrell

Senior Health and Science Reporter

CNBC

(Moderator)

Meg Tirrell is CNBC's senior health and science reporter.

Since joining CNBC in April 2014, Tirrell has covered the development of new medicines for Alzheimer's, cancer and rare diseases, and tracked public health emergencies from Ebola to Zika to the COVID-19 pandemic. Her reporting has also chronicled the massive set of trials seeking to hold the drug industry accountable for the opioid epidemic, market failures that have led to life-threatening drug shortages, and the ongoing fight over the cost of medicines.

Prior to joining CNBC, Tirrell covered the biotechnology industry for Bloomberg News, where she also contributed to Bloomberg Television and Bloomberg Businessweek.

Tirrell holds a master's degree in journalism from Northwestern University and a bachelor's degree in English and music from Wellesley College.

REDRAWING THE CANCER DETECTION CURVE

A CONVERSATION WITH THRIVE'S ISAAC RO

Thrive is a healthcare company whose mission is to bring earlier detection of multiple types of cancer into routine medical care using a simple blood test, known as a liquid biopsy. In October 2020, Thrive announced that the company is expected to be acquired by Exact Sciences for $2.15B. *Pulse* writer Tara Sullivan connected with Thrive's CFO Isaac Ro to talk about his career and Thrive's pursuits.

Isaac Ro

CFO

Thrive Earlier Detection Corp.

***The Pulse*: Will you tell us about your career path and how you arrived at Thrive?**

Isaac Ro: When I graduated from college, I was interested in business and chose to start off in consulting. I soon realized I was very curious about how the stock market works and how businesses are valued. So, I pivoted and spent the next 16 years as a Healthcare equity research analyst on Wall Street, with most of those years at Goldman Sachs. I focused on a sector known as Life Science and Diagnostic Tools. I really enjoyed that experience because these stocks are unique in that they are driven by a combination of science, Healthcare policy and their financial prospects. It's a really complex equation and at the same time, there is a tremendous amount of innovation across the industry, particularly in the field of genomics. I joined Thrive as CFO in May 2019 right when the company launched. Fast forward to 2020, COVID has obviously been a terrible thing but one silver lining is that it has made diagnostic testing top of mind for people everywhere. COVID will take many lives this year but cancer takes many lives every year. Detecting cancer earlier with liquid biopsy is a big idea because we know survival rates are dramatically better when the disease is found in earlier stages before tumors grow and spread. We have an opportunity to make a really significant impact.

"There is a huge need to change the way cancer is diagnosed, and as a result, potentially have an outsized impact human health. This is about as big an idea in healthcare as you could think of."

***The Pulse*: Several companies are trying to succeed in the liquid biopsy space. Where is Thrive focused and what milestones have you achieved since launching?**

IR: There are three primary applications for liquid biopsy: screening, tumor profiling, and disease and recurrence monitoring. Thrive and a few other companies are working on screening tests for healthy people who have no signs or symptoms of cancer. This is the killer application for liquid biopsy. It's also the hardest one to realize. Others are focused on tumor profiling: once a cancer is diagnosed, testing interprets its genetic signature and matches the patient to the optimal treatment. This is a smaller market but high value add since better matchmaking can yield better outcomes. Finally, monitoring tests keep close eyeballs on patients in remission who are at risk of recurrence. These tests need to be high resolution and can be more expensive, justifiably so.

It's only been about 18 months since Thrive's launch and we've achieved a lot. We've grown our team from 30 to nearly 140 and we're proud of the diversity we have. Our scientific founders at Johns Hopkins have been working with Geisinger Health System since 2017 to study a prototype of our blood test in 10,000 people. In April, we published the results of this landmark study in the journal Science: our test identified cancers with high specificity and at earlier stages. Those results jump started this industry and put Thrive on the map.

***The Pulse*: We'd love to hear about your experience joining Thrive. The company was very young and small when you started; what were your first days like?**

IR: My prior work on Wall Street was at Goldman Sachs which has >30,000 employees, so joining the Thrive team of less than 30 presented a different day-to-day reality. We were sharing an office in Cambridge with two other start-ups and we were still hanging up the Thrive logo on the

wall when I started. But even on the first day, it was clear to me that we were setting forth on a big mission with a lot of ambition, talent, some great data, but not a whole lot of tangible assets. We had the whole world in front of us, with a lot of ideas that were well-conceived but still unproven.

It was also clear that I was surrounded by people who had taken jobs for Thrive's mission. There is a huge need to change the way cancer is diagnosed, and as a result, potentially have an outsized impact human health. This is about as big an idea in healthcare as you could think of. While it was sometimes scary to think we had a lot of work to do, one of our cultural mottos is to be unwavering. We were extremely unwavering in those early months, confident that our work would have a positive impact on the world. That was empowering, to go into the unknown with a mission we thought was very pure. I am very proud and thankful to have been invited to be part of it.

***The Pulse*: You joined a science-heavy startup without a hard science background; how did you assess whether this was the right next career step?**

IR: I'm a methodical person - I looked closely at the team and had a high degree of confidence that we could navigate the unknown and pivot well. Our lead investor is Third Rock Ventures, arguably the most successful biotech VC of the last 10-15 years. They've launched more than 50 companies and know how to build successful biotech organizations. Also, several folks on Thrive's team came from Foundation Medicine; they were pioneers in genomic cancer testing and had created a lot of commercial value.

Thrive's investor syndicate had an appropriate perspective on what it was going to take to succeed. It's one thing to raise money once, it's another thing to know you're going to have to come back in the future to realize your goals. Our investors had deep pockets and a long view, so I felt confident we would be able to walk the path together. This was really important.

***The Pulse*: As CFO, you guided Thrive through its Series B raise and recently to an exciting sale. What are the synergies between Thrive and Exact Sciences that made this the right acquisition deal?**

IR: In October we announced the acquisition for $2.15B (pending close) and there are a couple big merits to this transaction. Exact Sciences is one of the most successful companies in cancer screening over the last 15-20 years. They developed a product called Cologuard which revolutionized colon cancer screening. They run over 2 million tests a year, and started at essentially zero just seven years ago. The scientific, regulatory, and commercial expertise they've built reflects over a billion dollars of investment. They have a massive sales force, huge operational infrastructure, real technical chops that Thrive would need to replicate for our own business. The deal gives Thrive a huge jumpstart in all of those areas.

Thrive brings tremendous expertise in liquid biopsy; there are only a handful of companies that have a team that knows how to bring this technology to life and we're one of them. Our founders at Johns Hopkins, led by Dr. Bert Vogelstein, are the pioneers in cancer diagnostics and screening. They are focused on getting this technology into people's hands; in fact, Bert's self-stated dream is to bring the earlier detection of cancer, including many with no screening tests available today, to the masses. The acquisition will help us accelerate that dream.

This marriage between Thrive and Exact is highly complementary and all of the key market forces are converging now so it's a great combination of fit and timing.

***The Pulse*: What's a broader healthcare industry trend you're keeping tabs on?**

IR: Digitization of healthcare is a mega theme I'm watching - so many areas of healthcare are ripe for automation and digitalization. We see this already with robotic surgeries and with the increasing pervasiveness of software in healthcare. We're also seeing huge opportunities to apply artificial intelligence and machine learning to accelerate drug development. Let's get more space age - digital therapeutics - will software-as-a-drug be a thing? Can an app help to treat ADHD? On Wall Street, we historically defined most healthcare companies in one of three baskets: drug companies, device companies, or services companies – I think those lines are rapidly being blurred by digitalization. We're going to see hybrid business models we haven't before seen.

***The Pulse*: You've advanced quickly throughout your career - getting promotions, expanding scope, working on exciting deals. What's your secret sauce?**

IR: It's actually quite simple: choose your career based on the people you work with. At each major inflection point in my career, there's been a purposeful decision to choose the people above everything else. This has had the single biggest effect on my personal success. People tend to get enamored with technology, salary, titles and business cards - all those things are important to defining success, but if you start by solving for the quality of people with whom you work and learn from, that informs more than you might want to believe.

Interviewed by Tara Sullivan, December 2020.

Panel 2: Investing During a Pandemic and a Recession

Friday, February 19, 2021 - 11:15 AM–12:10 PM ET **Investing**

Many investors have weathered economic cycles, but the pandemic is creating an operating environment that tests the norms, creativity, and resourcefulness of the industry. How have the underlying principles of deal-making and fundraising changed? Has Covid-19 led to a drastic shift in what an attractive investment looks like? Our panelists will share their experiences over the past 12 months, highlighting lessons learned and where they plan to focus their attention both today and in a post-Covid world.

Darren M. Black (WG'03)

Managing Director

Summit Partners

Darren M. Black is a Managing Director with Summit Partners, a global alternative investment firm that is currently managing more than $23 billion in capital dedicated to growth equity, fixed income and public equity opportunities. Darren joined Summit Partners in 2013 and focuses primarily on the health care & life sciences sector. Darren's current board directorships include Abode Health Care, InnovaCare Health, Leon Medical Centers, LifeStance Health, Paradigm Outcomes, PharmScript, Sound Physicians, Thrive Skilled Pediatric Care, VaxCare, Vertava Health, and U.S. Renal Care. His previous board and investment experience includes ABILITY Network (acquired by Inovalon), Advance Health (acquired by New Mountain Capital), DMG Practice Management Solutions (acquired by Ares Management) and HealthSun (acquired by Anthem).

Prior to Summit, Darren was a Managing Partner with SV Life Sciences, where he focused on health care services, health care information technology and pharmaceutical services. Prior to SV Life Sciences, Darren was Cofounder and President of two companies—ClinCare and PharmaStar. Previously, he was a health care consultant for Accenture.

Darren holds an AB in government from Harvard College and an MBA from the Wharton School of the University of Pennsylvania. Darren serves on the boards of directors for Combined Jewish Philanthropies and Friends of the IDF.

Devin O'Reilly (WG'03)

Managing Director

Bain Capital Private Equity

Devin O'Reilly is a Managing Director at Bain Capital Private Equity, where he is Co-Head of Healthcare investments in North America. Devin previously spent five years in the firm's London office, where he led the European private equity healthcare team. Prior to joining Bain Capital in 2005, he spent several years as a consultant for Bain & Company where he focused on healthcare and private equity industry clients. Previously, he also held management positions in the healthcare and technology

industries. Devin serves on the board of directors of several Bain Capital portfolio companies, including Aveanna, Grupo Notre Dame Intermedica, Surgery Partners, US Renal Care, Zelis, and several historic investments. He is also a member of the investment committee of Bain Capital's Double Impact Fund which is focused on social impact investing. Devin is a trustee of Carroll School, an innovative elementary and middle school that serves children with language-based learning differences. Devin received an AB from Princeton University and an MBA from The Wharton School.

Camille Samuels

Partner

Venrock

Cami Samuels focuses on healthcare with an emphasis on biotech, medical devices, and consumer health. She currently serves on the board of Iris, Unity (UBX), and XCaliber – and previously served on the board of several other Venrock companies including Corvidia (sold to Novo Nordisk), Spirox (acquired by Stryker via Entellus) and RegenXBIO (RGNX). Prior to Venrock, Cami was a Managing Director at Versant Ventures where she supported many companies including Genomic Health (GHDX), Jazz (JAZZ), Kythera (KYTH/acq by Allergan), Novacardia (acq by Merck), and ParAllele (acq by Affymetrix). Before her venture career, Cami worked in business development at Tularik (acq by Amgen). During her early career, Cami worked in corporate development at Genzyme and Millennium Predictive Medicine and was a management consultant at LEK Consulting. Cami earned her Bachelor's degree in Biology from Duke University and an MBA from Harvard Business School, where she graduated as a Baker Scholar.

Ali Satvat (WG'03)

Partner, Private Equity

KKR

Ali Satvat joined KKR in 2012. Mr. Satvat is Co-Head of the Health Care industry team within KKR's Americas Private Equity platform, for which he is a member of the Investment Committee and the Portfolio Management Committee, and Global Head of Health Care Strategic Growth, for which he chairs the Investment Committee and the Portfolio Management Committee. He has served on the boards of directors of AcuFocus, Ajax Health, Arbor Pharmaceuticals, Blue Sprig Pediatrics, BridgeBio Pharma, Clarify Health Solutions, Coherus BioSciences, Eidos Therapeutics, Headlands Research, Impel NeuroPharma, PRA Health Sciences, Slayback Pharma, Trilogy MedWaste, and Zeus Health and has also been actively involved with KKR's investments in Falcon Vision, Gamma Biosciences, GenesisCare, Gland Pharma, PHC Holdings (formerly Panasonic Health Care), and Spirox. Prior to joining KKR, Mr. Satvat was a Principal with Apax Partners, where he successfully led or participated in many of the firm's health care private equity and growth equity investments. Previously, he held various positions with Johnson & Johnson Development Corporation, Audax

Group, and The Blackstone Group. Mr. Satvat earned an A.B., magna cum laude, in History and Science from Harvard College and an M.B.A. in Health Care Management and Entrepreneurial Management from The Wharton School at the University of Pennsylvania. He is a past member of the board of directors of the Health Care Private Equity Association.

Bret Tenenhaus (WG'16)

Senior Vice President

Great Point Partners

(Moderator)

Bret Tenenhaus is a Senior Vice President at Great Point Partners, a health care-focused private equity firm based in Greenwich, CT. In this role, he oversees all aspects of deal sourcing, transaction execution, and portfolio company support. Bret currently serves on the boards of MLM Medical Labs, Little Spurs Pediatric Urgent Care, and Steripack.Prior to his role at Great Point Partners, Bret worked at General Atlantic and Goldman Sachs. He received his MBA from The Wharton School as a member of the Health Care Management program and a BA in economics from Dartmouth College.

ACCELERATING INNOVATION THROUGH VENTURE STUDIO

A CONVERSATION WITH REDESIGN HEALTH'S BERNIE ZIPPRICH

Redesign Health is a healthcare innovation platform that brings together entrepreneurs, industry experts, and investors to elevate healthcare companies that empower people to live their healthiest lives. Redesign's venture studio incubates tech-enabled companies that work to transform healthcare — elevating patient experience, increasing transparency, and democratizing access to high-quality care. Bernie Zipprich (WG'16) is a member of the New Ventures team at Redesign, where he has a hand in all parts of the company incubation process, from opportunity assessment to launch.

Bernie Zipprich (WG'16)

New Ventures

Redesign Health

***The Pulse*: Redesign operates a venture studio focused on health tech innovation - will you explain the venture studio model and why it's especially compelling in healthcare?**

Bernie Zipprich: The traditional stereotype of starting a company is: two people working on an idea in a garage, maybe they go out and try to cobble together funding, build out a product, and often are living on a shoestring budget and eating a lot of ramen. I say this with affection - starting a company is really hard and requires perseverance and fortitude. In healthcare it's especially hard and requires a lot of time and capital.

Now consider the role of venture capital - they write checks to and take equity to help startups achieve profitability and sustainability. For a Limited Partner looking to invest in a venture fund, maybe they assume 10% of the fund's portfolio gets an outsized return, 50-60% gets a decent return, and the rest sees a loss but it balances out.

Redesign Health's model is different in that investors are arguably getting the same portfolio diversification, but are paying for a level of risk mitigation in all the portfolio companies. That risk mitigation comes from Redesign having in-house team members who are regulatory experts, marketing experts, product experts, recruiters, engineers, etc. This makes us really good at slogging through the challenges that make it hard to start a healthcare company. This also compresses the time and capital needed to get a company to market and scale. We're de-risking startups, which allows us to drive attractive returns to founders and LPs.

If you're a founder out in the wild, you might be relying on personal relationships and luck to pull together the right team. But with an innovation platform like Redesign's, we get to purpose-build teams for specific companies and we have capital to deploy on Day 1.

"If you're a founder out in the wild, you might be relying on personal relationships and luck to pull together the right team. But with an innovation platform like Redesign's, we get to purpose-build teams for specific companies and we have capital to deploy on Day 1."

***The Pulse*: Tell us about your role on Redesign's New Ventures team.**

BZ: On the New Ventures team I get to work on everything from ideation through launch. I collaborate with cross-functional experts on different parts of the process, like idea sourcing, prototyping, market testing, financial modeling. If our work points toward an opportunity looking feasible and desirable, we'll take it to Redesign's investment committee. Once an investment is made, we recruit the company's founding team and get the commercial operations up and running. It's a team sport and I enjoy collaborating from the initial idea to getting a company to market.

***The Pulse*: Is Redesign focused on specific themes in the healthcare industry?**

BZ: There are two big movements in healthcare today: movement towards value and towards consumer centricity.

"Innovators are seeing that the best way to generate evidence is to put products in people's hands. By doing this, they will be better positioned to make a data-driven case for coverage by health plans."

Redesign companies tend to share a common thread that ties back to these themes: improve the patient experience, increase access to care, make care higher value where possible.

***The Pulse*: We're seeing a lot of health tech startups going DTC and putting new products directly in patients' hands before seeking broad insurance coverage. Are Redesign companies pursuing this strategy?**

BZ: Yes, companies need ways to pilot their solutions with actual patients, and this is a great way for early-stage companies to generate the data needed to win broader coverage by industry incumbents. This is a paradigm shift - healthcare innovators starting with the end user, generating data, iterating, and making sure they're creating something valuable to patients. This also helps them build credibility to sell into large incumbents.

***The Pulse*: It's cool that this shift to consumer centricity in health tech means that people are more regularly taking part in the innovation and validation process.**

BZ: Right, and keep in mind that culturally the US healthcare industry is informed by medicine and science, and evidence. Innovators are seeing that the best way to generate evidence is to put products in people's hands. By doing this, they will be better positioned to make a data-driven case for coverage by health plans.

***The Pulse*: You know the healthcare landscape extremely well - what are a couple of industry trends you're excited to watch unfold?**

BZ: The shift of care into the home is really powerful and interesting; it's going to make a big difference for a lot of elderly people and vulnerable populations.

I also think it's critical that the increase in discussions around health equity that we saw in 2020 doesn't go away. The entire industry - leaders especially - must continue these conversations.

I often think about how hard it is to innovate in Medicaid space given the structure and economics of the program. I'd love to find ways to use digital tools to lower costs and increase access. How can we take approaches working in other settings and apply them to help some of the most vulnerable (and often highest cost) patients?

I'll add a macro observation; as we use digital tools to personalize healthcare and reach people where they are, we run the risk of making people more disconnected from one another. I hope we don't lose sight of the power of community in healthcare. I recently spoke with a healthcare leader in South Florida who said that their waiting room has morphed into a community center with patients showing up when they don't have appointments just to play dominoes or trade gossip. There's something really special about that. As we innovate towards personalized health care and better health outcomes, we must remember that it's not only about what we build for individuals, but it's also about the systems and communities we build around them. I don't think our current system offers great answers for how to do this at scale, but it's something I hope we think more about. We're seeing a lot of the social determinants work in the market scratching the surface of this.

***The Pulse*: As you reflect on your career progression, what advice would you offer to others?**

BZ: It's important to have a clear view of your own values. Ask yourself what's important to you and what motivates you. Be willing to recognize that there will be times you need to put your head down and grind (and it might not be a ton of fun), but balance this with whether you're moving in the direction you're excited about. Another important skill is

adaptability: try to be really low-ego, to listen and approach things with a fresh mind. Part of what I like about working at Redesign is that I don't have all the answers, nor do my colleagues. But because we're realistic about this, it opens us up to learn a lot more. Maintain a sense of direction based on your values and a dedication to learning - these are good ways to find some interesting twists and turns in your career.

Interviewed by Tara Sullivan, January 2021.

"As we use digital tools to personalize healthcare and reach people where they are, we run the risk of making people more disconnected from one another. I hope we don't lose sight of the power of community in healthcare."

PEOPLE OVER PRODUCTS

A CONVERSATION WITH TREVOR PRICE, THE CEO AND FOUNDER OF OXEON HOLDINGS

Oxeon is a professional services and investments firm driven by the mission of making people healthier. The company includes three distinct business units: Oxeon Partners, Oxeon Venture Studio, and Town Hall Ventures. Oxeon Partners is a retained executive search firm. Oxeon Venture Studio builds and launches healthcare companies, and Town Hall Ventures is a venture capital firm that invests in innovative healthcare companies. *Pulse* writer Jamie Marvil sat down with CEO and Founder Trevor Price to discuss Oxeon and their endeavors.

Trevor Price, C'91

CEO and Founder

Oxeon Holdings

***The Pulse*: Can you please provide an overview of your background and how you came to found Oxeon?**

Trevor Price: Throughout my career, it has become clear that people are more important than products and markets. Great teams figure their way out of inferior products and small markets, while poor teams ruin great products and huge markets. I had been exposed to executive search through my mother who is an accomplished executive search consultant, but as an entrepreneur, I didn't love the traditional executive search model. Furthermore, as a venture-backed entrepreneur, I thought there was room to bring more value from the investing side as well. What came out of these experiences and feelings was the convergence of three things: executive search and investing from an entrepreneurial lens.

At the start of Oxeon, we were breaking down the executive search industry, getting rid of the traditional commission-based compensation and transaction-based culture. From there, we began to look at how we could leverage the relationships and information being built on the executive search side to be better investors and entrepreneurs. For example, when we run a CFO search for a hospital provider, I see it as an opportunity to talk to all the CFOs in the space and learn about the toughest problems these individuals are trying to solve. In the end, this information all feeds into the businesses that we are funding through Town Hall Ventures or that we are creating through our Venture Studio.

***The Pulse*: As the founder of an executive search firm, you and your team support companies in identifying and attracting highly successful leadership. How do you think about building a management team that works well together and is set up to drive value?**

TP: There is an infinite number of scenarios that a company might be faced with, so there is no straightforward, one-size-fits-all answer. The management team for an early-stage startup without product-market fit will be totally different from that of a highly specialized growth equity company. Our job as executive search consultants is not to define what a company needs, but to help our clients commit to an intellectually engaged search process. We need to help them think through the archetypes of executives that might match and actively calibrate on the role. At the end of the day, successful executive search is not about dictating an outcome.

> "People are more important than products and markets. Great teams figure their way out of inferior products and small markets, while poor teams ruin great products and huge markets."

***The Pulse*: What do you see as being some of the biggest challenges that your portfolio companies face, both more broadly and as a result of COVID-19?**

TP: The first challenge is really getting the team right. Before Town Hall Ventures, Oxeon made twenty investments between $100K and $2M off our balance sheet. We built the leadership teams for each of these companies, and not a single one has declined in value since. In fact, nine of the twenty have achieved unicorn status, and that's all in technology-enabled healthcare services. If that's not a screaming indication for great teams, I don't know what is. Secondly, product-market fit is crucial and not just from the perspective of engaging and retaining a consumer. It's really about following the money and figuring out the perverse incentives in healthcare. Having an organization that is sophisticated enough to navigate the misalignment of incentives in healthcare is important.

"I have two daughters, and I am married to an incredible woman. I am the son of an incredible woman, and my employee base is at least a 50/50 gender split. It is unacceptable that our governance structures in our country are so lacking in diversity."

***The Pulse*: Many trends in healthcare, such as the transition to virtual primary care, have been accelerated by COVID-19. Of these trends and transformations, which do you see as being here to stay for the long haul?**

TP: I think telehealth is here to stay, but to what extent remains to be seen. Most of the businesses we work with have gone from low-to-mid double-digit percentages for virtual health visits to 95% in April and May of 2020. Yes, I think telemedicine is here to stay, but I think reimbursements are going to get cut significantly, and I think the pendulum will swing back at least some of the way. I think value-based care is here to stay. I think in-home care is here to stay. I also think COVID-19 is showing even more than before the impact of social determinants of health including housing insecurity, food insecurity, job insecurity, and transportation. The pandemic has shown a spotlight on much of the innovation that was validated through the first-generation of value-based primary care companies and companies focused on mental health and social determinants of health.

***The Pulse*: You've mentioned that Oxeon aims to help underserved populations. As an investor, what is the opportunity there, and why is it an area you are so excited about?**

TP: The easiest way to frame the opportunity is through those served by Medicare and those served by Medicaid. Pre-COVID-19, over 135 million Americans participated in those two programs, and now the number is closer to 140 million Americans. Collectively, these populations consume over $1.4T of healthcare every year.

At the end of 2020, almost 40% of all Medicare beneficiaries were enrolled in Medicare Advantage plans. Yet, if you were to aggregate Iora, Oak Street, Landmark, etc., you are probably under 2.5% market penetration. It's crazy when you think about it.

On the Medicaid side, post COVID-19, you will likely have north of 75 million Americans on Medicaid and almost 37 million children enrolled in Medicaid and CHIP. You tell me whether there are any other industries that are as underpenetrated as technology-enabled healthcare services focused on risk-based and complex care for people enrolled in managed care programs within Medicare and Medicaid. It's a massive market that is totally underpenetrated.

***The Pulse*: In 2016, Oxeon partnered with Deerfield to launch the "Break into the Boardroom" initiative to drive greater representation of female healthcare executives in the boardroom. Can you talk a bit about how this initiative came to be and how this initiative is progressing?**

TP: "Break into the Boardroom" was a brainchild of my partner Mia Jung, who is an incredible force. I have two daughters, and I am married to an incredible woman. I am the son of an incredible woman, and my employee base is at least a 50/50 gender split. It is unacceptable that our governance structures in our country are so lacking in diversity. Within the first fifteen seconds of her elevator pitch on the idea, I was like "Yes, let's do it." Mia has led the initiative, partnered with Leslie Henshaw at Deerfield. We identify high potential female executives working in healthcare and bring them together into a peer group. There is mentoring, development, and preparation to take on independent board seats at venture-backed, private-equity backed, and public companies. We then actively connect these women with those people making decisions about the board seats, whether it's investors or nominating committee chairs. We have placed nearly forty women on boards in the past couple years.

Overall, these efforts are a source of immense pride within the organization. At the end of the day, there are things that are just more important than revenue and profits.

Interviewed by Jamie Marvil, December 2020.

Panel 3: Artificial Intelligence Enabling the Transformation of Hospital Systems

Friday, February 19, 2021 - 1:15 PM–2:10 PM ET **Payor Provider #2**

This event brought to you by athenahealth

As the volume of actionable data continues to increase, hospital systems will need to be deliberate and thoughtful about how they leverage artificial intelligence to improve outcomes, reduce costs, and create sustainable operations. What will the hospital of the future look like with these tools in place? How can hospitals leverage AI to be better prepared for the next public health crisis? Our panelists will share their experiences and insights around what may unfold.

Ruben Amarasingham, MD, MBA

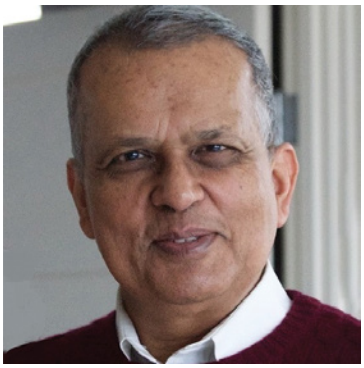
Founder and CEO

Pieces

Ruben Amarasingham, MD, MBA, is the Founder and CEO of Pieces, a healthcare AI firm that specializes in clinical decision sciences. Dr. Amarasingham is also the Founder and past president of PCCI, a scientific research institute based in Dallas, Texas whose focus is clinical trials and biomedical informatics, and gave rise to Pieces.

Dr. Amarasingham is a national expert in the design of AI products for healthcare and public health, and the use of innovative care models to reduce disparities, improve quality, and lower costs. Prior to his role as CEO of Pieces, Dr. Amarasingham was the Associate Chief of Medicine at Parkland Health & Hospital System, and a professor in the departments of General Internal Medicine and Clinical Sciences at the University of Texas Southwestern Medical Center, where he also served as the Director of the Biomedical Informatics Program for the NIH Clinical and Translational Science Award. Ruben is a past member of the national board of directors of HIMSS.

Dr. Amarasingham received his Bachelor of Science degree from Brown University and his MD from the University of Texas Southwestern Medical Center, where he received the Bryan Williams scholarship for Academic Excellence all 4 years of his training. He received postdoctoral training in biomedical informatics and health services research as a Robert Wood Johnson Clinical Scholar at the Johns Hopkins Medical Institutions. He completed his MBA at the Johns Hopkins Carey Business School.



Amar Gupta

Research Scientist

MIT

Amar Gupta rejoined MIT in 2015, and is affiliated with the Computer Science and Artificial Intelligence Laboratory (CSAIL) and the Institute for Medical Engineering & Science (IMES). Earlier at MIT, he served as Director of the Research Program on Communications Policy and coordinated the establishment of the Internet Telephony Consortium that played a pivotal role in the commercialization of the Voice-over-IP technology. He also served as Founding Co-Director of the Productivity from Information Technology (PROFIT) initiative and is the lead inventor of the patent on automated reading of back checks. This concept is manifested in the Check 21 legislation in the US, and is now used in countries around the globe.

During the interim period, he served as Dean of Computer Science in New York and Thomas R. Brown Endowed Professor at the University of Arizona, where he held multiple positions including Professor of Management, Professor of Computer Science, Professor of Law, Professor of Public Health, and Professor of Social and Behavioral Sciences.

He holds a bachelor's degree in electrical engineering from Indian Institute of Technology, Kanpur, a master's degree in management from MIT, and a doctorate from Indian Institute of Technology, Delhi. He has served as an advisor to World Health Organization.

C. William Hanson, III, MD

Chief Medical Information Officer and Vice President

University of Pennsylvania Health System

C. William Hanson, III, MD, Professor of Anesthesiology and Critical Care, Surgery and Internal Medicine at the Hospital of the University of Pennsylvania, is an internist, anesthesiologist and intensivist. He is currently the Chief Medical Information Officer and Vice President of the University of Pennsylvania Health System and interim Chair of Anesthesiology and Critical Care. Dr. Hanson has extensive experience in medical informatics and was Visiting Professor in the Princeton University Department of Computer Science between 2002 and 2005. Dr. Hanson's anesthetic specialty is cardiac anesthesia (cardiac surgery, thoracic surgery, lung and heart transplantation). His research using "electronic nose" technology to detect diseases such as pneumonia and sinusitis by breath analysis has been featured in Scientific American. He recently published The Edge of Medicine: The Technology That Will Change Our Lives, a non-fiction book profiling innovations in biotechnology that are changing the delivery of medical care and the ways in which they're altering the human experience. Also in a recently published, Smart Medicine: How the Changing Role of Doctors Will Revolutionize Health Care, Dr. Hanson reveals the revolutionary changes that will

soon be sweeping through the medical community. Dr. Hanson's research has been featured in national and international publications, including Popular Science, U.S. News and World Report, and has been a guest on NPR's Fresh Air as well as television documentaries on the Discovery Channel.

Adam Landman, MD, MS, MIS, MHS

Chief Information and Digital Innovation Officer

Brigham Health

Adam Landman, MD, MS, MIS, MHS is Chief Information and Digital Innovation Officer for Brigham Health. In this role, Landman is responsible for maintaining a focus on excellence while developing system-wide strategic information technology initiatives, with the goal of evolving the next generation of information systems across the Brigham Health enterprise. Landman is also an Associate Professor of Emergency Medicine at Harvard Medical School, and an attending emergency physician at Brigham and Women's Hospital.

Landman received his MD from the Rutgers-Robert Wood Johnson Medical School and trained in Emergency Medicine at UCLA Medical Center. He was a Robert Wood Johnson Foundation Clinical Scholar at Yale University, where he also received his Masters of Health Sciences. He completed graduate degrees in Information Systems and Health Care Policy and Management at Carnegie Mellon University.

Lily Peng, MD

Physician-Scientist and Product Manager

Google Health

Dr. Peng is a physician-scientist and product manager for Google Health. Her team works on applications of deep learning to increase the availability and accuracy of care. Some of her team's recent work includes building models to detect diabetic eye disease, predict cardiovascular health factors from retinal images, detect breast cancer and lung cancer from screening scans. Before Google, Dr. Peng was a product manager at Doximity and a co-founder of Nano Precision Medical, a drug delivery device start-up. She holds a B.S. with honors and distinction in Chemical Engineering from Stanford University and a MD/PhD in Bioengineering from the University of California, San Francisco.

Mike McCoy

Research Scientist

Humana

(Moderator)

As Associate Director of Emerging Technology at Humana, Mike helps internal leadership understand how to use new software, hardware, technical systems and methods on the cutting edge to enhance experiences in health care, life science and public sector use cases. Previously at Accenture and ConsenSys, Mike has worked in technical strategy, development, integration and growth to use and scale emerging technologies to industry standards.

Outside of Humana Mike is an Adjunct Professor at Thomas Jefferson University's Institute of Emerging Health Professions as a lecturer and course developer for their graduate certificate programs. He is also Chair The Linux Foundation, Hyperledger Healthcare Special Interest Group and an active member of IEEE, HIMSS, Frontiers, Blockchain in Healthcare Today, Blockchain for Social Impact and other technical and social working groups.

FROM UBER TO OSCAR

A CONVERSATION WITH MEGHAN VERENA JOYCE

Oscar is on a mission to simplify health care. Oscar Health Insurance is a technology-driven health insurance company founded in 2012 and focuses on the ACA exchanges and Medicare Advantage markets. Headquartered in NYC, the company boasts a new virtual primary care offering and a transparent claims pricing system to make it easier for patients to navigate their health. Pulse writer Jeremy Rubel sat down with COO Meghan Verena Joyce to talk more about Oscar and her experiences.

Meghan Verena Joyce

COO

Oscar Health

***The Pulse*: Can you provide us an overview of your background and how you came to join Oscar Health?**

Meghan Verena Joyce: After business school, I looked for a general management role in a mission driven organization. Uber was just getting off the ground at that point. I jumped on board as the GM of Uber Boston the April before my graduation. I went to class in the morning and then headed downtown to the office in the afternoon. I took the day off for graduation and the rest is history.

I felt like I found my calling as the general manager at a mission driven organization. When I looked for my next step, that was my benchmark. I never thought I would land in health care because I thought you had to be deeply experienced to be successful – that it was not a space that was open to innovative and disruptive thinking. But when I got to know the Oscar team, I was delighted to find that they thought differently and welcomed my background in consumer tech and high growth organizations. I have been now been COO of Oscar for 13 months.

***The Pulse*: How has your general management experience at Uber translated into leading a health insurance company? What carries over and what has surprised you?**

"With our investments in technology and our regular member touch points, we have earned members' trust and the right and ability to shift their behavior in the direction of more affordable alternatives."

MVJ: It has been rewarding to see that so much of what I learned in my past life carries over to Oscar. High growth organizations share a lot of common challenges: scaling operations with technology, creating a consumer-centric product, and executing with speed. Both Uber and Oscar are building consumer-centric products in highly regulated environments with powerful incumbents. I have been surprised and delighted at how consistent the opportunities and challenges are.

At the same time, health care has its own nuances. I respect and understand why many say you need experience in health care to be successful. To get smart quickly, I partnered with clinicians and health insurance experts. Health care also has higher stakes because you are dealing with health and wellbeing. It is a responsibility and a challenge we do not take lightly.

***The Pulse*: Oscar was founded on the mission to help make health insurance easier to navigate for consumers and focuses on the direct-to-consumer individual market. Who do you imagine your target customer to be?**

MVJ: Our target customer has evolved meaningfully over Oscar's 8 years. In its early days, Oscar was often thought of as a New York based insurance company that targeted New Yorkers – young professionals who buy their insurance on the exchanges. Over the last several years, we have diversified our mix of markets, customers, and product lines. Now our customers range from a 26-year-old professional coming off their parents' insurance, to parents who need a plan for their family, to a senior who is looking for a Medicare Advantage plan, and everything in between. This diversity has made us a better insurance company and even more member-focused because we need to serve a very wide range of customer needs.

***The Pulse*: In Oscar's experience, what programs are most successful at keeping members healthy and reducing the total cost of care?**

MVJ: Oscar is working to bend the cost curve through deep trust and engagement with members. With our investments in technology and our regular member touch points, we have earned members' trust and the right and ability to shift their behavior in the direction of more affordable alternatives. For example, our care routing technology can help a member find a high quality, lower cost clinician. Or we can offer a member who otherwise might have gone to an emergency room a virtual primary care appointment that can meet their needs just as well. There is enormous opportunity in forming deep trust with our members so that we can avoid higher cost care that is also a terrible member experience. Members are thrilled when we can avoid high cost care and improve their health care experience at the same time.

***The Pulse*: Oscar has been ahead of other insurers in offering telehealth and digitally enabled care coordination. In what ways was Oscar well-prepared for recent accelerated adoption of these technologies we have seen during the COVID-19 pandemic?**

MVJ: We were as disturbed and saddened as anyone when the COVID-19 pandemic hit. But we realized we had a number assets that we could use to deploy in the time frame that the pandemic required in ways that would benefit our members. We have invested in a full stack and member-centric approach to virtual care for years. When COVID hit, we immediately ramped up capacity on our virtual channels and made free virtual appointments even more accessible than ever before. We very quickly spun up a clinically informed online survey that you could take to assess your risk of COVID. We introduced a COVID test site finder that we opened to not only our members but also the broader community so that anyone could find a COVID test. If you remember, in the early days, that was quite difficult. Since then, we have accelerated the work that we would have done anyway now that COVID is asking more of us and our members. It has been an honor to serve in a time of great need.

***The Pulse*: In 2019, Oscar announced its entry into the Medicare Advantage (MA) market. What was the company's strategic rationale? What has Oscar learned about how to be successful in MA compared to the individual market?**

"In order to do that, I fill my bench with people who are better and smarter than I am; hold them accountable to building their own bench; focus on tackling the things that we are uniquely capable of tackling; and push everything else down into the team."

MVJ: Medicare Advantage, like the individual market, is a kind of insurance purchased by individuals. We saw an opportunity to bring our technology and deep service approach to create a differentiated member experience. And the bet is panning out. Digital engagement is nearly as high in MA as high in the individual product. The capabilities we built for the individual market are translating to MA. It has been a neat opportunity to not only partner with our network partners to broaden the members they serve but also to give our communities more options. There are many Oscar members who age out of the individual markets. Now we can give them a MA plan in certain markets to serve them into their later years.

***The Pulse*: At Uber, your leadership roles grew from managing a team of 5 to more than 700. What advice do you have about how to build a successful team?**

MVJ: In a high growth organization, the key is scaling the team as fast as the business is scaling - and ideally even faster, so that the team can stay a step ahead of the business and see around corners for upcoming opportunities and risks. This requires the size of the team to meet the needs of the business as it grows, but also the leadership capabilities and bandwidth to stay a step ahead of the game as well. In order to do that, I fill my bench with people who are better and smarter than I am; hold them accountable to building their own bench; focus on tackling

the things that we are uniquely capable of tackling; and push everything else down into the team. This gives more junior members of the team great opportunities to step up and lead - and their managers the opportunity to poke their heads up and focus on the next biggest challenge coming around the bend. The exciting part about this approach is that people at every level in the organization get enormous opportunity for growth and contribution - all while scaling and growing the business.

Interviewed by Jeremy Rubel, November 2020.

TESTING THE BOUNDARIES

MODERN FERTILITY'S MISSION TO MOVE THE FERTILITY SPACE FORWARD

Modern Fertility is a reproductive health company making personalized fertility information more accessible, so women can own the decisions impacting their bodies and futures — whatever those decisions may be. Since launching in 2017, the San Francisco-based startup has commercialized at-home hormone tests to help consumers find power in their fertility information and help them get proactive about their reproductive health. In 2019, the company raised $15 million to expand their product and research investments. Co-founder and CEO Afton Vechery connected with *The Pulse* to discuss the company's inception, mission, and progress.

Afton Vechery
Co-Founder and CEO
Modern Fertility

"Our goal is to help you parse through the complicated science and provide a stance that is straightforward and proven. You should be empowered to make your own fertility-related decisions, and we tee up the information to help you do so."

***The Pulse*: Will you give us a bird's eye view of your career path and how it led you to founding Modern Fertility?**

Afton Vechery: My backward-looking perspective is that each step in my career has given me different learnings that culminated with founding Modern Fertility. In reality, each time I made a career jump it was part gut, part research, and a decision to move forward. After college I joined a healthcare PE firm where I identified healthcare sectors that were growing and had consolidation potential. I focused on women's health due to personal interest and led the diligence for an investment in a network of IVF clinics and labs. This gave me a chance to learn the business of infertility, at least through a PE lens. I learned not only about the science of infertility, but also the emotional side - I talked with women who weren't aware of fertility declining with age or that IVF doesn't work for everyone. I was struck not just by the compounding growth of this sector, but by how infertility was a massive industry that nobody seemed to be talking about. I felt like I had a unique window into this secret world.

Then I moved to SF and worked at a few personalized health and women's health companies. After falling in love with product, I joined 23andMe and ran their consumer tools division, helping relaunch the product after it was shut down by the FDA. It was at 23andMe that I learned the value of owning your own health information. It was also during this time that I realized I was waiting until later in life to start a family. I tried to pursue the fertility testing I'd learned about earlier in my career and saw in infertility clinics, but my doctor wouldn't order it since I wasn't actively "trying and failing" to have children. I ended up going to an infertility clinic to access testing, and it was an all-around challenging experience. There were months of appointments and tests that I was trying to time to my highly irregular cycle, dense, hard-to-understand interpretations of my hormones, and a surprise $1,500 bill at the end. That said, when I finally got my results, it was empowering to understand my timeline and make decisions with my partner and doctor.

But the *aha* moment for Modern Fertility came later, when I was sharing my testing experience with friends, family, and other women. Pretty soon, I was talking to hundreds of peers and friends of friends who all felt in the dark about their reproductive health. I recognized the cultural shift we're in the midst of: women are demanding more information about their bodies and wanting to think proactively about their fertility. This catalyzed the question, 'How do we start a fertility information company that empowers women to own the decisions that impact their bodies and futures, whatever those decisions might be?"

***The Pulse*: Will you describe the products Modern Fertility has launched to help achieve this mission?**

AV: The first product we launched was the Modern Fertility Hormone Test. We took the same testing done in a clinic and made it accessible at home at a fraction of the cost. It's a finger prick test and that measures between 2-7 hormones, depending on the type of birth control a woman may be using. This snapshot allows us to provide women

with a baseline understanding of fertility and how it's changing over time, including their ovarian reserve (AKA: egg count), hormonal conditions like Polycystic Ovary Syndrome (PCOS) and Premature Ovarian Insufficiency (POI), potential success with IVF, your fertile window and menopause onset, and more. We have customized age and result-specific reports for each hormone and we offer a 1:1 consultation with a fertility nurse to answer questions about your results. We recommend customers do annual hormone check-ins to look at rates of change. Just like how our metabolisms decline at different rates, our fertility does too. The Modern Fertility test can flag changes that look quicker than expected.

After we launched our Fertility Hormone Test, a lot of community members were asking us which ovulation and pregnancy tests they should take. So, we did a deep dive and looked at these tests for hormones measuring our monthly cycles and ovulation. We brought to market a semiquantitative ovulation test that helps pinpoint your most fertile days through urine. It provides deeper levels of information about your ovulation patterns than the industry's standard tests, and thus works for all types of bodies, regardless of if your cycle is "average." Our product includes 20 urine strups which are easily scannable with Modern Fertility's app so you can measure your ovulation over time. I'm not actively trying to conceive and I'm still obsessed with knowing when I'm ovulating; it's empowering to have this information. In the pregnancy test category, you see two types of tests; you can test on the first day of a missed period, or 5- 6 days before it. Modern Fertility launched the latter type - we offer an early detection test, which pairs with our app. It's also very, very fairly priced. Pregnancy Tests should be for everyone! Our Ovulation Test and Pregnancy Tests are sold on our site, and also through nationwide Walmarts and on Walmart.com.

All Modern Fertility products come with free access to resources and information that empower customers to start thinking about their fertility proactively. We host a weekly webinar that walks people through the hormones we test and why they matter, and customers have constant access to our online community where people are talking about everything from their test results, to work, IUDs and mental health. We try to maintain close ties via our community, social, and emails - we are obsessed with talking to people with ovaries to understand how they are thinking about their health and what they think we should build next.

***The Pulse*: Modern Fertility uses the term "clinically neutral" to describe the fertility information provided to customers — what does this mean for your strategy?**

AV: It's important to us that all the information we provide is clinically neutral, meaning we do not offer medical advice (that's between you and your doctor) and would never tell a person what to do with their body (that's between you and yourself). In spaces that lack clinical information, you'll often find stigma and coercion. This has been the case in the fertility industry for far too long, but these decisions are significant and highly personal. We like to emphasize that egg-freezing, IVF, a certain pill or life plan might not be for everyone, but personalized, clinical information to help make these decisions is unanimously useful. Information is for everyone.

What we will do is work with our medical team and advisory board to synthesize medical guidelines and literature. Imagine the way your best friend might share information with you, if they were an OBGYN. Our goal is to help you parse through the complicated science and provide a stance that is straightforward and proven. You should be empowered to make your own fertility-related decisions, and we tee up the information to help you do so.

***The Pulse*: In addition to making fertility tests more accessible, Modern Fertility is making big investments in research. Can you tell us about the research gaps you see and how you're trying to fill them?**

AV: There is an incredible dearth of women's health research, with a particular increase in studies over the past two decades. But more specific to fertility research, the fertile patient population is not well-studied. Of the ~3500 pieces of literature published annually, the large majority focuses on people who present to infertility clinics, inherent to the reactive nature of this industry. Research has discovered predictive tools that help us proactively evaluate risks in many areas of healthcare, but we don't have that in fertility — it's a total black box. Think about the way fertility care is set up: today's system is based on trial and failure. About 1-in-6 couples will have trouble

"We're a physician-mediated, direct-to-consumer company, but as we've built our community, we are now tied into these conversations with our customers. It's important to invest in this type of two-way dialogue; we're a better company for it."

getting pregnant, and at least 1 in 4 pregnancies end in a miscarriage. These couples try for 9-12 months, and then only when they fail can they get help with next steps (and that's if they have insurance coverage). In reality, there are tools and information that could be used before the try-and-fail process to help people understand their fertility and get ahead of issues.

Since Modern Fertility is trying to help the fertile patient population navigate health decisions, this research gap is a big focus for us. When we launched, we wanted to make fertility information accessible through testing, while also moving this space forward through research and continuing to improve the quality of this information. We now offer the ability for customers to consent to have their anonymized data used in peer-reviewed research. With this data, we're working on building better predictors of fertility and uncovering new nuances in the fertile timeline. We're combining biomarker information, self-reported lifestyle information, and more. We're tying this information together in what we believe is the largest set of fertile patient data, and using it to determine better predictors of future fertility that equip women with more and better info. This can all influence what the trying-to-conceive process looks like in the future.

Independent of this research on our proprietary data set, we'll partner with organizations and leaders outside of our immediate community with complementary expertise to better understand different cultural elements of fertility. For example, we partnered with the LGBTQ+ dating app HER and the prominent gender research Mere Abrams to research LGBTQ+ fertility and family planning, and we partnered with SoFi to look at how fertility, money and careers are interlinked.

***The Pulse*: Modern Fertility makes testing feel approachable and empowering. It seems like the community you're building is a core part of this strategy - can you tell us more about the community?**

AV: We had a ton of customers telling us they wanted to talk about their test results and engage with others, so we needed to find a way to facilitate these powerful conversations. We launched our community on slack, which has now evolved to about 15,000 women talking about their fertility, their timelines, and sharing in a general support system. Fertility was already something that's bubbling up into group texts for so many women — our community captures this conversation on a much bigger scale.

As we've cultivated this community for our customers, it has also become a way for us to maintain an open line of communication with customers. I think we're just getting started in terms of how we should leverage the community as part of the Modern Fertility experience. We're a physician-mediated, direct-to-consumer company, but as we've built our community, we are now tied into these conversations with our customers. It's important to invest in this type of two-way dialogue; we're a better company for it.

***The Pulse*: Modern Fertility has pursued a direct-to-consumer strategy since launch - what was your rationale? As you think about future growth, will you consider partnerships with doctors or other healthcare stakeholders to reach new customer segments?**

AV: I believe that as an early stage company, you have to choose what muscle you're developing. We launched with a physician-mediated DTC approach because we wanted to have a direct line of communication to customers and we thought a grassroots strategy would enable us to bring this important information to more women more quickly. It has been interesting to see how DTC is opening up other channels with physicians like OBs, PCPs, and reproductive endocrinologists. We have seen evolution here, with doctors

now reaching out to us and asking if they can recommend Modern Fertility for their patients, and wanting to learn our process and how we can fit into their workflows. This has been really encouraging for us. I'm confident that starting this Modern Fertility as a physician-mediated DTC has enabled us to be really intentional as we consider next steps in new channels.

As we grow, we will remain focused on one of our founding principles: to be intentional and honest about the way the end-to-end care pathway occurs for our consumers. We see perverse incentives in the fertility space; this is a vulnerable self-pay patient population in large part, and we've seen companies monetize relationships in ways that don't have consumers' best interests at heart. It's important to us - and aligned to our mission - to be intentional and honest about the way we provide value to our customers. This requires extra thought and effort to execute but has been part of our thinking since Day 1. It's an area where we won't compromise.

Interviewed by Tara Sullivan, January 2021.

Panel 4: Hype for Hospital at Home

Friday, February 19, 2021 - 1:15 PM–2:10 PM ET **Payor Provider #1**

Hospital-at-home remains early in its adoption curve, serving as a tool for leading hospitals to reduce total cost of care or to alleviate inpatient volumes. As interest in hospital-at-home surges as a result of Covid-19, will there be fundamental changes in the industry to drive continued adoption and utilization? Are patients willing to have qualifying procedures in the home? Join our panel as they discuss the current state of hospital-at-home and the outlook for inpatient care in the home.

Erin Bartley

Chief Operating Officer

Medically Home

Erin is a health care executive who has spent her career focused on enabling health systems to achieve and accelerate their clinical transformation goals. As Chief Operating Officer for Medically Home, she oversees customer implementation and account teams focused on partnering with health systems across the country to help them build virtual hospital capabilities. Prior to Medically Home, Erin spent over 18 years in health care consulting working with health systems and hospitals to achieve financial and operational improvements. Erin holds a Bachelor of Science in Business Administration from the University of North Carolina Chapel Hill and Master's in Health Services Administration from the University of Michigan. Erin lives in Winston Salem, North Carolina with her husband Adam and two sons.

Travis Messina

Founder and CEO

Contessa Health

Travis is passionate about treating patients in a setting that best fits their needs, which is often the home. He founded Contessa in 2015 to provide a new standard of health care for providers, payers and patients. Since its launch, the company has partnered with six health systems across the US and continues to grow. Before Contessa, Travis built his career investing in health care ventures. He spent time at Martin Ventures, Vanguard Health Systems, Signal Hill Capital and SunTrust Robinson Humphrey.

Travis has a BBA in International Business from the University of Georgia and an MBA from Vanderbilt University's Owen School of Business.

Mark Prather, MD, MBA

Chief Executive Officer and Founder

DispatchHealth

Mark Prather MD, MBA, is the founder and CEO of DispatchHealth, a technology-enabled provider of on-demand, high acuity in-home medical care. Dr Prather is an industry insider with a passion for transforming health care delivery and improving clinical outcomes. He has over two decades of experience at the bedside as an emergency medicine specialist.

Previously, Prather served as the President of US Acute Care Solutions, an outsourced acute care provider serving over 6,000,000 patients annually. Throughout his career, Dr. Prather has leveraged technology to improve care delivery and has been involved in multiple medical technology start-ups including iTriage, where he served as medical director.

Dr. Prather completed his undergraduate studies at Vanderbilt University. He attended medical school at UCLA and went on to complete his residency training in emergency medicine at Denver Health and Hospitals where he served as Chief Resident. He obtained his MBA from the University of Colorado.

I. Steven Udvarhelyi, MD

President and Chief Executive Officer

Blue Cross and Blue Shield of Louisiana

Dr. Udvarhelyi is President and Chief Executive Officer of Blue Cross and Blue Shield of Louisiana (BCBSLA). He is a board certified internist and has more than 25 years of experience in the health insurance industry. Prior to joining BCBSLA, he was with Independence Blue Cross (IBC) in Philadelphia for almost 20 years, most recently serving as Executive Vice President, Health Services and Chief Strategy Officer. Prior to IBC he worked for Prudential Health Care in a variety of roles, including Vice President, Operations for Florida and Vice President, Medical Services.

Dr. Udvarhelyi received an A.B. degree from Harvard College, an M.D. degree from the Johns Hopkins University School of Medicine, and a Master of Science degree in Health Services Administration from the Harvard School of Public Health. Prior to his career in the managed care and health insurance industry, Dr. Udvarhelyi was a faculty member at Harvard Medical School with a focus on health services research.

Dr. Udvarhelyi currently serves on a number of boards, including Blue Cross and Blue Shield of Louisiana, the Blue Cross and Blue Shield Association, the Baton Rouge Health District, the Baton Rouge Area Chamber and the Business Council of New Orleans. He previously has served on: the Board of Directors of NaviNet, which he chaired, the Board of Trustees of the Franklin Institute (in Philadelphia, PA), the National Board of Trustees of the Devereux Foundation, the Board of Managers for Tandigm Health, the

Board of Directors of NCQA, the Board of Directors of America's Health Insurance Plans (AHIP), the Institute of Medicine (IOM) Roundtable on Evidence-Based Medicine and the IOM Committee on Comparative Effectiveness Research Priorities.

Bruce Leff, MD

Professor of Medicine

Johns Hopkins University School of Medicine

(Moderator)

Dr. Leff is Professor of Medicine at the Johns Hopkins University School of Medicine, where he directs the Director of the Center for Transformative Geriatric Research. His research focuses on novel models of care delivery for older adults, issues related to multi-morbidity, risk prediction, performance measurement, and quality measurement and improvement, with an emphasis on home and community-based models of care including Hospital at Home, home-based primary care, CAPABLE, and others. He co-directs The National Home-Based Primary Care Learning Network whose mission is to advance the field of home-based medical care through a coordinated program of quality improvement and applied research. He has served on multiple NQF, NCQA, and CMS Technical Expert Panels. He cares for patients in the acute, ambulatory, long-term care, and home settings, and is an award-winning teacher and mentor. He currently serves as the Chair of the Geriatric Medicine Board of the American Board of Internal Medicine (ABIM) and Chair of the ABIM Council. He has served as past -President of the American Academy of Home Care Physicians, where he help develop and implement the Independence at Home Demonstration (section 3024 of the Affordable Care Act). He is a past-member of the Board of Regents of the American College of Physicians and serves on the editorial board of the Annals of Internal Medicine.

HOUSE CALLS FOR THE CHRONICALLY ILL

CAROL DEVOL AND LANDMARK HEALTH

Landmark Health provides home-based care to the chronically ill. Founded in 2013, Landmark's care model combines a longitudinal multidisciplinary team with 24/7 urgent visits. Headquarted in California, Landmark has risk-bearing deals with Medicare Advantage, Medicaid, and commercial plans in 15 states. *Pulse* writer Jeremy Rubel sat down with COO and Co-Founder Carol DeVol to talk more about Landmark and her experiences.

Carol DeVol

COO and Co-Founder

Landmark Health

***The Pulse*: What drove you to co-found Landmark?**

Carol DeVol: There is no country in the world that has a better acute care system than the United States. But that system does not do the best job caring for the chronically ill and too many chronically ill are forced to rely on it. Patients with multiple chronic conditions often require 35+ minute appointments, but primary care physician (PCP) offices may not be set up for long visits. PCPs do hero's work in our country, particularly now. But they are not set up for the care needed by the most frail, chronically ill. Moreover, patients struggle to access primary care on a timely basis. Frequently, a person with a chronic illness has an exacerbation that goes from 0 to 100 in a matter of hours. Even if the PCP can see the patient the next day, the patient might be in the ER by 8pm that same night because her condition can deteriorate that quickly.

The founders of Landmark believed there was a better way to care for the frail, chronically ill. This population is well served by longitudinal care delivered in the home by a multidisciplinary team. We designed a system of care to respond more quickly to treat exacerbations and to avoid ER visits.

The Pulse: 25% of Landmark's house visits are made on an urgent basis. How do you manage the operational challenge of rapid clinician deployment at scale?

CD: We have improved our ability to respond urgently over time. When Landmark first started, the longitudinal provider left unscheduled flex time to respond that same day. As we've matured, we created specialists called "urgentivists" who solely focus on responding to urgent visits.

We also developed a 24/7 call center that we call "Landmark First". Clinical staff of physicians, nurse practitioners, and physician assistants triage inbound patient calls. We do not have to deploy an urgentivist if the need can be managed telephonically. Through our call center, we can connect a patient with a provider on the phone within 3 - 5 minutes. With our scale and focus, we can provide this type of responsiveness which is difficult for an office-based practice to do.

***The Pulse*: Landmark boasts a 39% reduction in ER visits compared to a control group. What is the key driver of these successful results for Landmark's care model?**

CD: Landmark's outcomes are due to its combination of longitudinal proactive care and its ability to respond urgently. Imagine a patient with 5 or 6 chronic conditions. With longitudinal care, the patient will have fewer exacerbations. Then, if there is an exacerbation, our urgentivists provide care within 60 or 90 minutes to prevent an ER visit. The two sides of the model work hand in glove.

***The Pulse*: In the last 18 months, Landmark has nearly doubled its patient population, now serving over 100 thousand patients in 15 states. As COO, what are the key operational challenges to expanding into a new market?**

CD: Landmark deploys an implementation team of operators and clinicians to launch a new market. First, they secure office space, recruit new employees, and coordinate with health plans. Second, there is a clinical delta team composed of nurse care managers, physicians, and nurse practitioners. They interview new clinical employees, train them on our clinical model, and perform clinical work side-by-side with those they just hired. Third, the new market implementation team meets with local community providers. We want to collaborate with providers to explain how we complement their work. A lot of community providers ultimately become referral sources because they understand the value that Landmark brings to their patient population. Our Landmark First clinical call center is another advantage when we enter a new market because we already have after hours and triage resources ready to go.

***The Pulse*: During this pandemic, how does Landmark make patients comfortable with a clinician entering their home?**

CD: First and foremost, clinicians need to have PPE. We worked diligently to expand our inventory. We also make sure that when our providers go inside a home, the patient and their family/caregivers wear a surgical mask for source control.

In the first 2-3 weeks of the pandemic, we pivoted hard and quickly to telemedicine. That said, telemedicine is not a cure all for our frail elderly population. We quickly pivoted back to 80-90% in-person visits once we had sufficient PPE and could safely re-enter homes. Now, we are at about 60-70% in-person visits given heightened caution due to the recent surge in cases. Although we seek to leverage telemedicine and conduct visits via video if we can, we have built comfort with patients with in-home visits based-on our safety protocols.

***The Pulse*: What has Landmark discovered about how to effectively use telehealth for an older patient population with complexities like hearing loss, vision impairment, or dementia?**

CD: If there is not a caregiver in the home who can facilitate, it may not be possible. Telehealth is a tool in the toolbox, and it will not fully replace the face-to-face visit, especially for this patient population with multiple chronic illnesses. We deploy ambassadors who train the family or the patient over the phone or over video on how to get set up with telehealth.

***The Pulse*: If you take the long view of the history of American health care, house calls were once common. In the 1940's house calls comprised 40% of doctor visits and today they're less than 2%. In your view, what explains why house calls fell out of favor and why do you believe they are poised for a comeback now?**

CD: House calls fell out of favor because they were no longer economically efficient. Physicians are higher cost labor, so it makes sense for physicians to stay in one location and see more patients. Provider offices gained new technologies that cannot be transported easily. And there's efficiency when multiple providers are in one setting. The patient can see a PCP and then the phlebotomist down the hall in a single visit. An office is more efficient for most patients and house calls should not completely replace that.

> "If you can provide longitudinal care and 24/7 urgent visits that reduce ER visits and nursing facility stays, then you can reduce costs and deliver a higher quality experience for the patient."

House calls are seeing a resurgence because companies like Landmark have recognized that they are more efficient in certain cases. If you can provide longitudinal care and 24/7 urgent visits that reduce ER visits and nursing facility stays, then you can reduce costs and deliver a higher quality experience for the patient. For the vulnerable population with multiple chronic conditions, the effectiveness of house calls makes it the best way to deliver care.

***The Pulse*: Where do you see Landmark headed next?**

CD: We were selected to participate in the CMMI (Center for Medicare and Medicaid Innovation) direct contracting demonstration. Right now, all our business is with health plans, but most Medicare beneficiaries still are on a fee-for-service model. We are excited to expand our reach to this new population.

We also just signed an agreement with a large risk-bearing provider group in the Bay Area. We expect to see growth signing deals with larger provider groups and systems that receive global capitations. In addition to these new avenues, we expect to continue to grow our footprint by signing up new health plans, especially in the traditional Medicare Advantage space. We now have relationships with multiple payers in many of our markets. We want to continue to add more density in our existing geographies because it creates a virtuous economic cycle.

Interviewed by Jeremy Rubel, December 2020.

ENABLING BETTER PRIMARY CARE THROUGH DATA

A CONVERSATION WITH FRED RONNAU, CHIEF TECHNOLOGY OFFICER AT RUBICONMD

RubiconMD was founded with the goal of increasing access to medical knowledge and ultimately improving care quality. Through the company's eConsults platform, clinicians can seek guidance from experts across 140 specialties. In addition, the company recently launched RubiconBH and RubiconRx to tackle behavioral health care and medication management, respectively. *Pulse* writer Jamie Marvil sat down with RubiconMD's Chief Technology Officer Fred Ronnau to discuss how the company aims to add value and support physicians.

Fred Ronnau (WG'08)

Chief Technology Officer

RubiconMD

***The Pulse*: Can you please provide an overview of your background and how you arrived at RubiconMD?**

Fred Ronnau: Post-MBA, I spent almost eight years doing Corporate Strategy and M&A at McKesson. After that, I co-founded a startup in Denver, my first time out of the healthcare space. It lasted a little under a year, not quite like any of us had hoped on the founding side. From there, I spent quite a bit of time at CareAllies with Cigna focused on Cigna's managed services organizations, where they partnered with physicians in the Medicare Advantage space.

In terms of how I got to RubiconMD, I ran into the two founders and was just really motivated by what they were building – at this point, they were just starting to scale. They convinced me to move from Denver to New York, to take a leap of faith and join them after the Series B. In taking on my role, I became responsible for running the engineering organization, as well as the product organization. Initially, when I started about a year and a half ago, we were really just focused on our core product, but since then, we have expanded beyond that. Now, as we hopefully start to move past COVID-19, we are looking forward to continuing to scale and grow.

***The Pulse*: Can you give a bit of context on what RubiconMD is and how you aim to add value?**

FR: The idea behind RubiconMD is a simple one and originated because the two founders had experienced their own challenges with getting access to good specialty expertise. The core concept is taking any question that a primary care provider has and routing that question to a national network of specialists. We cover 140 specialties – pediatric, geriatric, across the board – and we get the PCP an answer from a specialist. That PCP can then use that information to really help the patient. Over 75% of the time, the information allows the provider to improve the patient's care plan, and over 50% of the time, it eliminates the need for a specialist visit. Therefore, the platform not only reduces cost, but also allows patients to access care faster. Some of the populations we work with, whether it's Medicare or Medicaid, are faced with wait times for specialist appointments that span weeks or months. As such, we provide a big benefit to patients and a big benefit to the providers who are driving value-based care.

***The Pulse*: For these eConsults, how do you think about ensuring you are providing specialists with the right volume and type of patient data to be helpful?**

FR: It's a good question and one that we've thought about a lot. Early on, the company went to one extreme of saying, "what if we could make it really easy to upload information from the EHR?". However, PCPs then started attaching the whole patient chart, and the specialists couldn't get to the specifics of the question. So, in the past few years, we've really focused on which critical elements of the data are needed to inform the specialist and guide the resulting answer. We spent a lot of time sourcing the right academic specialists, trying to get that deep medical expertise that a lot of times sits in teaching universities or large hospital systems. We also need to help educate these specialists on how they can best guide the PCPs, and when thinking about what makes an excellent eConsult, we use a framework of 3 E's. The most helpful consults are evidence-based, educational, and effective.

***The Pulse*: Have you found that there are any specialties where RubiconMD has been particularly successful?**

FR: It's really funny because we initially thought there would be one specialty where this was the case. However, we've found our platform to be beneficial across the board when the right types of questions are asked. I think the easiest one for us though is something like dermatology, where a PCP can easily upload an image that's then sent to a dermatologist.

"At the end of the day for us, it's a matter of enabling the primary care doctor to do more."

Where we really help the most is when there is some grey area that requires an additional perspective or areas where primary care providers could extend themselves with just a bit more training and education. It provides PCPs with a sense of confidence in their ability to assess.

***The Pulse*: The US is seeing a growing provider shortage and increased prevalence of physician burnout. How does RubiconMD work to address this issue and alleviate some of the challenges faced by physicians?**

FR: Our physicians really think of us as an indispensable tool to help them extend their knowledge base and find better solutions for their patients. Ultimately, where our platform is particularly relevant is in the value-based care realm. There, we help alleviate burnout by giving physicians who are responsible for outcomes the tools to manage their patients more effectively – they can have a specialist in their back-pocket who can help them in their journey.

***The Pulse*: In 2020, RubiconMD launched a new behavioral health offering amidst a time when COVID-19 was shining a light on mental health. Can you talk a bit about this launch and how the product has better addressed patient mental health needs both during COVID-19 and broadly?**

FR: I can point to a couple things. First, if you think about the core of what we do, it's really trying to help primary care providers deal with challenging patients, often patients with not only physical ailments but mental illnesses. There's a lot of companies doing great things in this space, but we are trying to figure out how you integrate psychiatrists and behavioral care managers to better support primary care doctors.

One way we have done this is through simply connecting doctors directly to a specialist, rather than having them write a consult. The nuances of dealing with a patient's behavioral needs are often much more easily discussed over a phone call. Another way we have tackled this issue is getting into the collaborative care model, where organizations build out care teams that allow a psychiatrist to guide and provide recommendations to a large set of patients. The primary care doctor is still able to treat those patients but is doing that in a way that places a care manager in the middle. The question is really, "how do you leverage that specialist time?". We have a severe lack of psychiatrist resources for many populations. So how do you accelerate a model that is more effective at delivering that care? At the end of the day for us, it's a matter of enabling the primary care doctor to do more.

Interviewed by Jamie Marvil, January 2021.

KNOWLEDGE AS POWER

A CONVERSATION WITH KELLY ROBKE, US CHIEF NURSING OFFICER AT MICROSOFT

Microsoft is empowering health care organizations to improve the experience of patients and caregivers while furthering innovation across the system. Through partnerships with health systems and pharmaceutical organizations, Microsoft has helped personalize care for patients through data and enabled improved information sharing across care teams. Pulse writer Jamie Marvil connected with US Chief Nursing Officer Kelly Robke to learn more about her experience at Microsoft and some exciting trends in healthcare.

Kelly Robke, RN

US Chief Nursing Officer

Microsoft

***The Pulse*: Can you please provide an overview of your background and how you got to Microsoft?**

Kelly Robke: I am a registered nurse by background, and I've worked in healthcare innovation for thirty years. I initially worked in a variety of academic healthcare settings, primarily in maternal fetal health. It was through this path in maternal fetal medicine that I really developed a love of data and using data to make complex care decisions. This drove me towards research, where I learned a lot about regulation, primarily with the FDA but also in the realm of medical devices and research methodology.

The next part of my career was in innovation, working on a number of studies in women's health. I then transitioned over to more of the pharma/devices product space, helping to conduct clinical research. If I look for a common denominator across my career, it is really around innovation. After I received my MBA, I pivoted to technology and worked at Hewlett-Packard as an engineering product manager in their healthcare vertical. I applied my knowledge of healthcare to storage and storage networks that were really taking off for HP due to the onset of the EHR in healthcare and the EDC in pharma and device companies. Since then, I have worked in multiple technology companies, including Microsoft today.

***The Pulse*: Can you provide insight into your current role at Microsoft as US Chief Nursing Officer?**

KR: As CNO for the US market, it's an opportunity in two key areas. The first would be in thought leadership which encompasses quite a scope when you look at the opportunity to influence and educate. The second is empowerment and really working in the healthcare system to ensure we are using platforms that allow our customers to transform healthcare. Providing robust and comprehensive sets of information to clinicians and executives is an area we have to support in order to see progress in the healthcare space.

***The Pulse*: In recent years, we have heard a lot about the impact Big Tech can have in the healthcare ecosystem. What role do you foresee Big Tech playing and how do you imagine this will evolve over time?**

KR: It starts with knowledge as power, and I see it as being two-fold. You've heard a lot about the necessity for patient-centric care. It is a novel paradigm shift where we focus on the individual, the family, and the community that surrounds that patient. The first priority is being able to access data that is generated as a result of care instances that occur across the continuum. Care isn't just in the hospital anymore – it's in the community, it's at the retail pharmacy, and it's in the home. So, being able to have a robust set of data that we can access how and when we need it is critical to effectively supporting each patient. In doing that, big data helps strengthen the provider-patient relationship, a relationship that in some ways has been eroded over time. I think the second area where Big Tech can play a role is almost at the opposite end of the spectrum with the population. We have data coming from individuals that is informing population subsets, especially population groups that may be particularly vulnerable. Providers can be armed with knowledge around entire populations and ultimately have a better view on where to be mindful. That in turn drives value-based reimbursement models and benefits organizations as they aim to achieve specific outcomes around quality and compliance.

***The Pulse*: Can you talk about some specific ways that Microsoft is enabling more personalized care for patients?**

KR: I think it starts around efforts to build the platforms that healthcare providers require both in terms of today's challenges, which are formidable, but also in looking towards the future. There are many ways that Microsoft is actively participating in addressing those needs. This can include everything from enabling virtual visits to the

utilization of cloud services that provide uninterrupted care to providers and patients. It goes back to that idea of the right information at the right place in the right form.

***The Pulse*: As a leader at the intersection of healthcare and technology, what have you found to be some of the most fascinating innovations in healthcare in recent years?**

KR: Within healthcare, we have driven innovation into the core construct of our business models – it's no longer an afterthought or stretch goal to innovate. I see a lot of leaders who have actively championed the need to build transformation into their strategic plans, and I think they do this for three distinct reasons.

First, they know that providing care is extremely interpersonal. It's interpersonal in terms of the family unit and in terms of how we collaborate. It is also intersubjective which really speaks to that need to not only innovate within a specific environment but to scale that innovation across the continuum of care towards population benefit.
The second thing I think is really driving the pace of development is the science. Science continues to be a rich engine of novel and disruptive capabilities that are driving healthcare delivery, whether it be a new technique for surgery or new mechanism to deliver medications. I think the scalability of these technologies to appropriate populations is something that healthcare communities are really seeing a lot of momentum around.

Finally, in order to effectively incorporate the caring component and the science component, you need the business and financial elements. You need to be able to use the data to demonstrate the value-add, the productivity gains, and the demands that necessitate disruption. So, I really think those three things – the caring, the science, and the business – really have been the catalyst for innovation, and I look forward to being a part of it.

***The Pulse*: COVID-19 has accelerated the pace of innovation in many sub-sectors of healthcare. What transformations have you found to be most exciting? Which trends do you think are here to stay?**

KR: I see telehealth, being able to address the care of certain population segments within the home, as being here to stay. I think being able to understand when and where telehealth makes sense is an opportunity to learn and grow as an industry. I also feel that advances in technology around telehealth will continue to emerge. For me, it's been fascinating to see the scalability of many telehealth solutions. Furthermore, when these capabilities are augmented by supportive foundations around telehealth, you see a lot of the opportunity. For example, bots can be used to navigate patients to the right venue of care and provide the information they need at that moment of time. So, I do believe that telehealth is here to stay.

"Within healthcare, we have driven innovation into the core construct of our business models - it's no longer an afterthought or a stretch goal to innovate."

Interviewed by Jamie Marvil, January 2021.

Panel 5: The Covid Catalyst for Digital Health Adoption

Friday, February 19, 2021 - 3:15 PM–4:10 PM ET **Digital Health**

Increased consumerization and technological advancements have driven the adoption of digital health in recent years, but Covid-19 has been an unprecedented catalyst. Patients confined to their homes have sought new ways to communicate with their providers, receive their medications, and monitor their health. Is this “new normal” for our industry here to stay? This panel will explore how companies across the digital health value chain have approached patient care, what the global pandemic has meant for them, and what comes next.

Eric Kinariwala

Founder and CEO

Capsule

Eric Kinariwala is the founder and CEO of Capsule, a technology business rebuilding the pharmacy industry from the inside out with an emotionally resonant consumer experience and technology that enables customized outcomes for doctors, hospitals, insurers, and manufacturers. Capsule has raised over $250 million from TCV, Thrive Capital, and Glade Brook Capital.

Prior to founding Capsule, Eric invested in global health care, technology, and retail companies as part of the investment teams at Bain Capital and Perry Capital. He received his undergraduate degree as a University Scholar at the University of Pennsylvania’s Wharton School and earned his MBA from Stanford Graduate School of Business, where he held the position of Chief Investment Officer of GSB Endowment Student Investment Trust.

Eric is an EY Entrepreneur of the Year winner and has by interviewed in publications including Fast Company, Fortune, Bloomberg, and the Wall Street Journal; appeared on television including CNBC, Fox Business, CNN, PBS, and ABC; and presented at conferences including ShopTalk, HLTH, NRF Big Show, and TechCrunch Disrupt.

Zach Reitano

Co-founder & CEO

Ro

Zach is the CEO and cofounder of Ro, the health care technology company that powers a personalized, end-to-end health care experience from diagnosis, to delivery of medication, to ongoing care. Prior to Ro, he was Entrepreneur In Residence at Prehype, a leading venture studio in NYC. Zach was named Forbes’ 30 Under 30, Inc. Magazine’s 30 Under 30, Business Insider’s 30 Under 40 in Health Care, and EY’s Entrepreneur of the Year for New York. Ro was named #2 in Wellness on Fast Company’s 2019 list of the World’s Most Innovative Companies, and listed by Crain’s as a Best Place to Work in NYC.

Amir Dan Rubin

Chair & CEO & President

One Medical

Amir Dan Rubin serves as Chair & CEO & President of One Medical, the leading member-based primary care organization transforming health care with its human-centered, technology- powered model. Amir previously served as EVP at UnitedHealth Group's Optum division, where he focused on making the health system work better. Amir also previously served as President and CEO at Stanford Health Care—the academic health system affiliated with Stanford University—where he helped raise patient experience and quality scores to the highest levels in the nation, grow a regional network, and advance digital and population health. Amir also previously served as COO for UCLA Health, COO for Stony Brook University's health system, AVP at Memorial Hermann Health System, and management consultant at APM. He holds MBA and MHSA degrees from the University of Michigan, a BA from the University of California, Berkeley, and has twice received an EY Entrepreneur of the Year award.

Roy Schoenberg, MD, MPH

President & Co-CEO

Amwell

Roy Schoenberg is President and CEO of Amwell. Since co-founding the company with his brother Ido Schoenberg, Amwell has grown to become one of the largest telehealth eco-systems in the world, digitally connecting health care's key stakeholders - payers, providers and millions of patients in an efficient, modern health care experience. Prior to Amwell, Roy was the founder of CareKey and served as Chief Information Security Officer at TriZetto, following its acquisition of CareKey. In 2013, Roy was appointed to the Federation of State Medical Boards' Taskforce that issued the landmark guidelines for the "Use of Telehealth in Medical Practice". Roy is the 2014 recipient of the American Telemedicine Association Industry award for leadership in the field of telemedicine. An inventor at heart, Roy holds over 50 issued US Patents in the area of health care technology, speaks frequently in industry and policy forums, serves on the health care advisory board of MIT Sloan, holds an MD from the Hebrew University and an MPH from Harvard. He is a sailor, scuba-diver and, between September and February, a devoted football fan.

Julie Yoo

General Partner

Andreessen Horowitz

(Moderator)

Julie Yoo is a General Partner at Andreessen Horowitz where she leads investments in health care technology, with a focus on companies that are modernizing how we access, pay for, and experience the health care system. Prior to joining a16z, Julie was the co-founder, Chief Product Officer, and Board Director at Kyruus, a venture-backed

healthtech company recognized as a market leader in patient access. Julie led product management, engineering, and sales and marketing for the company, and helped scale the business to reach 20M patients and over 225,000 health care providers across the U.S. Julie was previously VP of Product at Generation Health, and was with the company from its inception through acquisition by CVS Health. Julie was also a Product Manager at Knome, the world's first whole genome sequencing service for private individuals. Julie's tech career began as an early member of the software engineering team at Endeca Technologies, which was acquired by Oracle. Julie studied computer science and pre-medicine as an undergrad at MIT and obtained an MS in genomics from Harvard-MIT HST and an MBA from MIT Sloan. Julie is a Young Global Leader with the World Economic Forum and has been recognized through numerous awards and honors from Becker's Hospital Review, Health Data Management, MedTech Boston, and Rock Health.

PERSONALIZING HEALTH CARE THROUGH WEARABLE DEVICES

A CONVERSATION WITH WHOOP CO-FOUNDER AND CTO JOHN CAPODILUPO

Whoop is a wearable device and corresponding analytics system that aims to unlock human performance through the continuous gathering and monitoring of physiological data. Recently, Whoop has been influential in the early detection of COVID-19 and has been involved in research around neurodegenerative diseases and sleep. *Pulse* writer Jamie Marvil sat down with Co-Founder and CTO John Capodilupo to discuss Whoop and the growth of the company in recent years.

John Capodilupo

Co-Founder and CTO

Whoop

***The Pulse*: Can you please provide an overview of your background and how you came to cofound Whoop?**

John Capodilupo: We started eight and a half years ago in the summer of 2012 when I was an undergrad at Harvard studying astrophysics and computer science. At the time, wearable wasn't even a word yet, and Fitbit had just come out with its first step counter. Will came across the Polar chest strap heart rate monitor and for the first time could objectively gauge how hard he was pushing his body. From there, he began to realize that monitoring your body while working out is important, but what happens the other twenty-two hours of the day? In the end, that is where the vision came from: to build a wearable system that could give you physiological metrics continuously throughout the day and then pair that with an analytics system that would help users make sense of the noisy physiological data. Will's background is on the sports and business side, and so he looked for a technical co-founder. We met through a series of friends, and I dropped out of Harvard after my sophomore year to focus on Whoop.

***The Pulse*: Can you give our readers a bit of context on what Whoop is and how you aim to provide value for your customers?**

JC: Our mission at Whoop is to unlock human performance, and we do that through a cutting-edge wearable that is solely focused on gathering physiological data continuously, truly 24/7. We collect heart rate, heart rate variability, respiratory rate, and motion data. From there, we stream the data to a mobile application and provide an analytics suite that breaks your data into three main components.

The first is called "Strain," which is a single number representation of the amount of cardiovascular stress you've placed on your body throughout the day. "Strain" is fascinating because it tracks stressors on your body that you might not even be aware of – doing an interview, taking a red-eye flight, these things add up. The next component is sleep scoring. We detect and score sleep much like you'd get at a sleep lab. Not only do we detect when you fall asleep and wake up, but we track the amount of REM sleep, light sleep, and micro-arousals. The third piece is a recovery score. It's a 0-100% number that you get first thing in the morning, and it's an indication of how physiologically ready your body is to take on strain that day. Although Whoop started with professional athletes, we have seen that these physiological metrics have applicability beyond athletics to cognitive function, general wellness, and in some cases, illness.

***The Pulse*: Over the last couple years, Whoop was used by Weill Cornell Medicine to understand the connection between neurodegenerative diseases, such as Alzheimer's, and sleep. Can you talk about this study and how you see Whoop playing a role in this space in the future?**

JC: The study, which was run by Cornell Medicine using Whoop straps, was quite fascinating. The study took people who had a higher likelihood of developing Alzheimer's disease based on genetic makeup and family history and observed their sleep patterns. Along with tracking sleep, the study also used traditional lab tests and cognitive tests throughout. Overall, the study found that there was no difference in blood test results between the group with a predisposition to Alzheimer's and the control group; however, there was an observed difference between the two groups in the composition of their sleep. Overall, it was interesting to see that there were physiological changes that weren't picked up by traditional tests that were evident in the biometric data collected by Whoop.

Sleep is a very important factor to track as it plays a role in many health outcomes. Unfortunately, it's also one of the hardest things to monitor in a clinical setting because sleep labs often disrupt the ways in which people sleep. As such, it's extremely important to get quality data outside the laboratory, and I am excited for Whoop to support different

research efforts. We've supported a variety of studies thus far and done our own investigation as well, everything from sleep apnea to COVID-19.

***The Pulse*: You mentioned COVID-19, and obviously early detection of the virus has become hugely important to the global population. I know Whoop has been influential in that in some cases, so would love to hear a little bit more about that.**

JC: One of the things we developed about two years ago was the ability to track people's respiratory rate, the amount of breaths you take per minute. When COVID-19 hit, one of our members unfortunately contracted the virus and offered us the opportunity to look at his data. In examining his data, we found that his respiratory rate jumped up to 4-5 standard deviations above his baseline respiratory rate when he got COVID-19. Of interest, this spike in his respiratory rate was at a sub-clinical level, meaning it was still below the common threshold that clinicians worry about (around 20 breaths per minute). However, for this individual the spike was significant: his baseline was around 14 breaths per minute, and his rate jumped to 18 breaths per minute when he came down with COVID-19.

From this, we decided to run our own study based on self-submitted COVID-19 results from our users. We developed a machine learning algorithm using the data that ultimately predicted 20% of cases before people were showing symptoms and 80% of all cases within three days of exhibiting symptoms. This goes back to the importance of each person's individual baseline: none of these individuals would have clinically triggered any alert based on vital signs, but the change from their baseline was still significant. By understanding medicine in this context, it shows how you can get ahead of disease before you spread it.

***The Pulse*: In the healthcare industry, we have seen a significant increase in the attention paid to wearables companies in recent years. What are some of the most exciting opportunities you see for wearable devices? Are there any healthcare trends that you hope to capitalize on?**

JC: Wearables have the ability to drive action through an understanding of an individual's own physiology, what is normal for them, and when something deviates from normal. Continuous data, especially if we know how to use it, has a ton of utility. I think the real use here is understanding the deviations from baseline to detect and prevent disease. This is an area that a lot of wearables companies are interested in: the recent FDA approval of Apple Watch's arrhythmia detection is evidence of this.

> "It was interesting to see that there were physiological changes that weren't picked up by traditional tests that were evident in the biometric data collected by Whoop."

Interviewed by Jamie Marvil, December 2020.

MAKING KIDNEY CARE PERSONAL

CRICKET HEALTH'S APPROACH TO VALUE BASED CARE

Cricket Health is comprehensive kidney care provider with a personalized, evidence-based approach to managing chronic kidney disease and end-stage renal dialysis. Headquartered in San Francisco and Boston, Cricket works with payers and providers to identify patients who are at risk, acts early to slow progression of the disease, and delivers kidney care through a multidisciplinary care team. *Pulse* writer Jeremy Rubel sat down with COO and Co-Founder James Chaukos to talk more about Cricket and his experiences.

James Chaukos (WG'16)

COO and Co-Founder

Cricket Health

***The Pulse*: Prior to co-founding Cricket, you worked at LinkedIn and J.P. Morgan and attended Wharton. What drove you to start a company in health care and kidney care in particular?**

James Chaukos: In the early part of my career, I realized that the times when I did my best work, and when I had the most motivation, were when I was working on a problem that not only had a real business behind it but would also have a positive impact on people's lives. So when I was at Wharton, those were the new opportunities that most interested me.

The first thing I did for Cricket was write the case for us to focus on kidney disease. This part of healthcare is one of the most heart-wrenching. It affects so many people, but doesn't get a lot of attention. And it's one of the areas in the U.S. healthcare system where there are a number of ways to dramatically improve the patient experience. When we started the company in 2015, we realized that there wasn't much attention from payers and investors in kidney disease despite it being one of the most common and most costly chronic diseases. Thankfully, today we have the complete opposite. You have momentum from the government, motivation on the payer side, and you have patients asking for a new solution.

***The Pulse*: How does Cricket improve the health outcomes of its patients?**

JC: At Cricket, we've been patient-centered from the jump. One of the most painful parts of a kidney disease patient's journey is the transition to dialysis. Many patients don't know they have kidney disease and crash into dialysis in the ER. So, we first focused on improving that transition to dialysis, which requires identifying people with or at risk for kidney disease early, understanding who is at the greatest risk for progression, and giving patients the tools and the care team that can help them manage their condition earlier.

"We believe that our impact is outsized because we reach patients that would otherwise be missed by status quo kidney care."

As we've grown the company, we've expanded our focus. We're now managing patients that are earlier in their disease progression, we've invested in making sure our identification and risk-stratification of patients is more accurate.

***The Pulse*: How does Cricket work with payers to identify eligible patients?**

JC: Our work with payers on the identification front starts early. When they are building the business case, we start to understand their data team's capabilities and their data structure itself; so once we move into the implementation phase, we can effectively work with the payer team to map their population and identify these members. We use data from three different sources: claims, labs, and other clinical data that is provided to us to identify who should be eligible for the Cricket Health program. Our data team can use all those different sources of data and create models that are better than any of those three sources alone, allowing us to predict patients' kidney function, who is at highest risk, and their risk of hospitalization. That's important because we can find those patients that are in the most need of intervention. We reach kidney disease patients that don't have a nephrologist and that are misdiagnosed or undiagnosed in claims. We believe that our impact is outsized because we reach patients that would otherwise be missed by status quo kidney care.

***The Pulse*: In the US, a large percentage of adults change insurance every year and when a patient's kidney disease**

"The second learning that I would mention is that structuring, separating responsibilities, deepening the bench, and adding depth and breadth to the team are all key during this phase of growth."

progresses to ESRD, they qualify for Medicare. How does Cricket manage this patient churn problem?

JC: The burden on innovative providers and value-based care providers like ourselves is showing improving outcomes month on month, so that when you go to a payer you can show them: while the patient is enrolled in our program, you are going to see improved outcomes in the months that they are enrolled. You aren't going to have to wait 12-18 months to see outcomes improve, by which point they may have left the plan. So even though patients may move out of the plan eventually, for those months that they are part of the program, there is still value to the plan and value to their members to them being enrolled in Cricket Health.

***The Pulse*: In 2019, the Trump Administration announced the Advancing American Kidney Health initiative to increase the share of home-based dialysis and to shift towards a value-based payment model. Have these policy changes impacted Cricket's business?**

JC: Absolutely. The kidney care initiative that the Administration announced was for us a positive development, with increased focus on early detection and alternatives to in-center dialysis, including increased home therapies and transplants.

What this has meant for us is that more providers are looking for partners to help them better support home dialysis, deliver condition management and improve health outcomes as a result. We think that's an important step: we need payers, existing providers and patients all focused on this, instead of on filling chairs in a dialysis center.

***The Pulse*: As co-founder and COO, you have seen the company grow to over 100 employees since its founding in 2015. What have you learned about how to effectively manage a large multi-layered team?**

JC: First of all, there is a lot to be learned from peers of ours that have gone through this growth. We're at a point now where there are a handful of companies that have implemented value-based care in other parts of the U.S. healthcare system. It's important to have humility and a learning mindset. Make sure you are talking to those folks that have done this before and incorporate those learnings into what you are doing.

The second learning that I would mention is that structuring, separating responsibilities, deepening the bench, and adding depth and breadth to the team are all key during this phase of growth. What you could do in the early days just by picking up the phone and calling your colleagues now needs to have structure and systems behind it. And that's what allows you to scale what worked in the early days to larger-scale, commercial deployments.

***The Pulse*: What are your goals for Cricket in 2021?**

JC: 2021 is all about growth for us. We've now got a handful of big commercial contracts that are live and are growing within those accounts. We are also going to be launching a number more. I'm excited for our team members that are able to experience that rapid growth and excited about how that growth can build their networks and experience but am most excited about what that growth means for patients that have kidney disease.

One of our cultural values that I'm really proud of is "Everyone is worthy." We think that every kidney disease patient in the United States is worthy of high-quality kidney care, and so right now I'm focused on our outreach and enrollment numbers, I'm excited to see those numbers continue to grow and for us to continue to build an organization that supports this change in how kidney care is delivered in the U.S.

Interviewed by Jeremy Rubel, January 2021.

DISRUPTING TRADITIONAL HEALTH SYSTEMS THROUGH TECHNOLOGY

A CONVERSATION WITH AARON MARTIN, THE CHIEF DIGITAL OFFICER AT PROVIDENCE ST. JOSEPH HEALTH

Providence St. Joseph Health is a major health system that consists of 51 hospitals and 1,085 clinics across seven states. Providence Ventures is a $300M venture capital fund that invests on behalf of Providence in innovative healthcare companies. *Pulse* writer Jamie Marvil sat down with Aaron Martin, the Chief Digital Officer at Providence St. Joseph Health and the Managing General Partner at Providence Ventures, to discuss his background and the ways in which Providence is adapting to a changing healthcare landscape.

Aaron Martin (WG'97)

Chief Digital Officer, **Providence St. Joseph Health**
Managing General Partner, **Providence Ventures**

***The Pulse*: Can you please provide an overview of your background?**

Aaron Martin: I pursued my MBA from Wharton in the Health Care Management program, and through that, decided to pivot to McKinsey where I mainly focused on pharma and medical devices. At the time, McKinsey pushed Engagement Managers to get experience in other industries, so I took a study at a financial services client who was launching one of the first internet banks. Through that engagement, a fellow McKinsey employee and I identified a gap in the technical stack that this bank was trying to launch, and we ultimately left McKinsey to found a company that would fill this gap. In the end, we sold the company back to the general contractor.

After co-founding a second company in manufacturing software, I decided to begin a career at Amazon that lasted for nine years.

***The Pulse*: How did you end up at Providence St. Joseph Health?**

AM: One day, I received a call from a McKinsey alum who was a headhunter at Spencer Stuart, and he told me that he had an out-of-left-field opportunity for me. He goes, "I am going to say two words to you – nonprofit healthcare. Are you still there?". When he delivered the message, he told me that I had to meet Rod Hochman (current CEO of Providence) and Mike Butler (former number two at Providence), who he said were disruptive healthcare executives. Based on my experience in the industry fifteen years prior, those words didn't always go in the same sentence, so I knew I had to speak with them.

When I met with Rod and Mike, they blew me away. This was during the ACA when there was a lot going on in healthcare, and they were already thinking about how Big Tech was going to come into healthcare. They recognized that if they didn't disrupt themselves - disrupt their own business - someone else would.

So, I ended up joining Providence and now wear a few different hats. First, I founded Providence Ventures, which is a $300M fund with twenty portfolio companies. Second, I run Marketing and our Digital team for the health system. The Digital team deals with anything consumer-facing – think our website, our apps, any digital component that the patient sees. Within that, we also have an incubator, and of our twenty portfolio companies, two (soon to be three) were actually created in-house.

***The Pulse*: In recent years, there have been many disruptors in the healthcare space who are changing the way patients access care and engage with the system more broadly. As a major health system, how do you think about your role amidst this transition, and how do you proactively manage this disruption?**

AM: I think the big thing that all health systems are struggling with is that we have a typical incumbent problem. One of the things Rod always talks about is the idea that pharma has all the profits, payers have the balance sheets, and health systems have all the debt financing most of the infrastructure needed in healthcare. Despite this, health systems really do a lot of the value-added work in healthcare – we are the ones who have hands on patients. So, we have a challenge in that we have a massive amount of incumbent infrastructure, some relevant, some increasingly irrelevant, and some necessary at times (like a Pandemic) and not as much at other times. The question becomes, "how do you manage that?".

The big challenge on our acute care side is balancing what the community needs intermittently. If there is a mass casualty event, a pandemic, there is a certain level of infrastructure that needs to be maintained. How do you insert optionality into these new models of care?

On the ambulatory side, how do you move patients online? Fortunately, most of the patients we see are relatively healthy and just need primary care visits. As such, it is our job to figure out how we engage with them digitally about their health because that is the biggest opportunity to convert the patient relationship from offline to online and to consequently help them become healthier in a scalable manner that will work in population health.

***The Pulse*: The US is seeing a growing provider shortage and increased prevalence of physician burnout. In your role, how do you think about using digital capabilities to improve the experience of caregivers?**

AM: We are tackling physician burnout on two fronts. First, we are trying to make sure that not only are we getting patients to the right venue of care, but that we are also doing as much work as possible with machines before the patient shows up. Second, our CIO, my counterpart, deals with all clinician-facing capabilities. Once a patient is in the clinical visit, he and his team make sure that as much as possible is automated. Then, the clinician is directing their attention to what we call "The Sacred Encounter," the engagement between physician and patient.

You want both doctor and patient to avoid as many distractions prior to and during the visit as possible. For example, we have a bot called "Grace" who basically asks patients all the rudimentary questions around medical history and reason for visit prior to an appointment. Then, when a patient actually sees their doctor, they have a fundamental discussion about the patient's health, unimpeded by the hindrances of the system. That's the vision, and we are heading toward it.

***The Pulse*: At the onset of COVID-19, Providence was quick to expand its telehealth solutions and remote monitoring capabilities. Can you talk a bit about these changes and how COVID-19 accelerated the pace of innovation?**

AM: We were fortunate to have made a ton of investments pre-COVID-19 that paid off because we were able to scale them dramatically. For example, we had been working on the bot "Grace" for two years prior to COVID-19, and we were able to use "Grace" to help people self-assess whether or not they had COVID-19. Then, we used DexCare to enable patients who needed further evaluation to see a nurse practitioner through a video visit. From there, once a patient was not sick enough to be admitted but required remote monitoring, we used another technology Xealth. Xealth would prescribe Twistle, which allowed for remote patient monitoring at scale. We would send a patient home with a pulse oximeter and a thermometer, and Twistle would text the patient three times a day reminding them to take their measurements. This enabled nurse practitioners to monitor thousands of patients and pursue additional care if someone was decompensating. We already had all these technologies in place for similar applications, and the teams had built the technologies to be very flexible.

"When a patient actually sees their doctor, they have a fundamental discussion about the patient's health, unimpeded by the hindrances of the system."

Interviewed by Jamie Marvil, December 2020.

Panel 6: Advocating for Access: Reform Amidst a Global Pandemic

Friday, February 19, 2021 - 3:15 PM–4:10 PM ET **Policy**

2020 has brought a renewed sense of urgency to foster conditions in which everyone can realize their full health potential. Recent policies — such as the CARES Act — have led to temporary regulatory waivers that have improved access to, and utilization of, health care. In addition, other policy proposals seek to reverse the current disparity in health outcomes and prevent a "K-Shaped" divergence in a post-pandemic world. This panel will explore the implications of recent policies and offer thoughts on how we can cultivate improved, accessible, and egalitarian health care.

Joseph Cacchione, MD, FACC

Executive Vice President, Clinical & Network Services

Ascension

Joseph Cacchione, MD, FACC, serves as Executive Vice President, Clinical & Network Services (CNS) for Ascension. CNS unites clinical and care excellence functions and subsidiaries that are core to Ascension's healing Mission. Bringing these functions and subsidiaries together creates a unique opportunity to position Ascension for the future and to operate in a manner that transforms healthcare and proactively addresses the holistic needs of those we serve. Dr. Cacchione came to Ascension in 2017 to lead Ascension Medical Group and later added oversight of Ascension Michigan. He was responsible for developing a culture of high performance for Ascension's Michigan Ministry Market and its national medical group.

Prior to joining Ascension, Dr. Cacchione served at the Cleveland Clinic. He began his role as Chairman of Operations and Strategy for the Clinic's Heart & Vascular Institute. In this capacity, he helped build a high-performing specialty network of providers around the country who contract with the Cleveland Clinic. The network he established now has 5 million lives under contract. Additionally, Dr. Cacchione directed the onboarding of 700 physicians who moved from independent practices to the Cleveland Clinic's private physician model.

Through his earlier service at Saint Vincent Health System in Erie, Pennsylvania, Dr. Cacchione served as Executive Vice President, Chief of Quality & Operations, overseeing the development of a number of service lines including orthopedics, oncology, neuroscience and cardiovascular. In his role with Saint Vincent, he also led physician alignment activities.

Dr. Cacchione is board certified in Internal Medicine, Cardiology and Interventional Cardiology. He received his medical degree from the Drexel University College of Medicine in Philadelphia, and his undergraduate degree from Gannon University in Erie, Pennsylvania. Dr. Cacchione was a member of the Board of Trustees of the American College of Cardiology.

Stephen T. Parente, PhD, MPH, MS

Professor, Department of Finance

Carlson School of Management, University of Minnesota

Stephen T. Parente, PhD, MPH, MS is a Professor in the Department of Finance and the Minnesota Insurance Industry Chair of Health Finance in Carlson School of Management at the University of Minnesota and Associate Dean of the Global Institute. From 2014-2017, he served as Associate Dean of MBA and MS programs. Dr. Parente is the longest serving Director of the Medical Industry Leadership Institute (2006-2017). As a Professor in the Finance Department, he specializes in health economics, information technology, and health insurance. Dr. Parente has been the principal investigator on large funded studies regarding consumer directed health plans, health information technology and health policy micro-simulation. In Washington DC, he served as Chief Health Economist and Senior Economist on the Council of Economic Advisers in the Executive Office of the President at the White House in Washington, DC from 2019 to 2021. Previously, he was Senior Adviser to the Secretary for Health Economics in the Department of Health and Human Services, Vice Chair of Academy Health and the Governing Chair of the Health Care Cost Institute from 2013 to 2017. He is the Founding Director of the Medical Valuation Laboratory, a nine-college interdisciplinary effort to accelerate medical innovation from scientists, clinicians and entrepreneurs. Dr. Parente was a health policy advisor for the McCain 2008 Presidential Campaign and served as Legislative Fellow in the office of Senator John D. Rockefeller IV (D WV) in 1992/93. He has a doctorate from Johns Hopkins University.

Craig E. Samitt, MD, MBA (WG'95)

President and CEO

Blue Cross and Blue Shield of Minnesota

In his role as president and chief executive officer of Blue Cross and Blue Shield of Minnesota and its parent company Stella, Dr. Craig E. Samitt is responsible for overseeing the strategy and operations of the state's first and largest health plan. Dr. Samitt came to Blue Cross in July 2018 from Anthem, Inc., where he served as executive vice president and president of their Diversified Business Group. He built partnerships within and outside of Anthem to provide new sources of growth for the enterprise and deepened Anthem's relationships and impact across the health care ecosystem. Concurrently, he led and executed a nationwide clinical vision and strategy as Anthem's chief clinical officer. Dr. Samitt's numerous accomplishments at Anthem include advancing the company's portfolio of provider partnerships and payment innovation models, leading quality improvements in patient outcomes and increasing the delivery of value-based care.

An internal medicine physician by training, Dr. Samitt has worked across multiple sectors within the health care industry. His career includes a number of senior executive positions, including partner and global provider practice leader at Oliver Wyman; president and CEO of HealthCare Partners, a subsidiary of DaVita HealthCare;

and president and CEO of Dean Health System Inc., one of the largest integrated health systems in the Midwest.

For nearly 25 years, Dr. Samitt has been a nationally recognized expert and thought leader on health care delivery and policy. His record of collaborating across the health care system to deliver higher quality care at a lower cost led to him being named as one of the "50 Most Influential Physician Executives and Leaders" by Modern Health Care in 2018.

Dr. Samitt currently serves on multiple boards, including the National Committee for Quality Assurance; the Blue Cross Blue Shield Association; the National Institute for Health Care Management Foundation; Minnesota Business Partnership; the Minnesota Council of Health Plans; Twin Cities Habitat for Humanity; the Medical Alley Association; and BCS Financial Corporation. Additionally, he is member of the editorial advisory council for FierceHealth Care publications. Dr. Samitt is a former commissioner of the Medicare Payment Advisory Commission (MedPAC), an independent agency that advises Congress on Medicare payment policy.

Dr. Samitt holds an undergraduate degree from Tufts University, a medical degree from Columbia University and an MBA from the Wharton School of Business. He completed a medical residency in internal medicine at Brigham and Women's Hospital in Boston and is a fellow of the American College of Physicians.Blue Cross and Blue Shield of Minnesota, with headquarters in the St. Paul suburb of Eagan, was chartered in 1933 as Minnesota's first health plan and continues to carry out its charter mission today as a health company: to promote a wider, more economical and timely availability of health services for the people of Minnesota. Blue Cross is a not-for-profit, taxable organization. Blue Cross and Blue Shield of Minnesota is an independent licensee of the Blue Cross and Blue Shield Association, headquartered in Chicago. Go to bluecrossmn.com to learn more about Blue Cross and Blue Shield of Minnesota.

Marylou Sudders, MSW, ACSW

Secretary, Health and Human Services

Commonwealth of Massachusetts

Marylou Sudders serves as the Secretary of Health and Human Services for the Commonwealth of Massachusetts, overseeing 12 agencies and MassHealth, with a combined budget of $24 billion and 22,000 public employees delivering essential services that touch the lives of 1 in 4 state residents.

Since joining Governor Baker's cabinet in January 2015, Sudders has advanced strategic policy priorities, including: restructuring MassHealth into a population-based health coverage system, reforming the child welfare system, addressing the opioid epidemic, integrating physical and behavioral health care, and strengthening community-based services.

Sudders co-chairs the Governor's Interagency Council on Housing and Homelessness, the Governor's Interagency Council on Aging, and chairs the Autism Commission and the board of Massachusetts Health Connector, the state's health insurance marketplace.

Sudders has held leadership roles across the public and private sectors, including serving as the Massachusetts Commissioner of Mental Health, a non-profit CEO, and associate professor and program chair at Boston College School of Social Work, a top ten nationally-ranked program.

Sudders holds a bachelor's degree with honors and a master's degree in social work from Boston University, and honorary doctorates from the Massachusetts School of Professional Psychology and Bridgewater State University. She is the recipient of many civic, social work, and professional honors.

Avenel Joseph

Vice President, Policy

Robert Wood Johnson Foundation

(Moderator)

Avenel Joseph, PhD, joined the Robert Wood Johnson Foundation (RWJF) in early 2020 as the vice president for Policy. She brings a wealth of government, management, and political expertise to leading the Foundation's Policy office and heading its Washington presence; serves as a key member of the Foundation's senior leadership team; and guides, motivates, and inspires RWJF's commitment to its policy and government engagement work to help build a Culture of Health, one that enables everyone in America to live longer, healthier lives.

Previously, Joseph served for more than 10 years shaping public policy in the U.S. House of Representatives and Senate. She began her career on Capitol Hill in 2009 in the U.S. House of Representatives where she worked in both a personal office and on the Natural Resources Committee focusing on the intersection of health and the environment. In July 2013 she moved to the Senate as the chief health advisor for Senator Edward J. Markey, managing a comprehensive health care portfolio before transitioning to become his director of Policy and Oversight, where she oversaw and coordinated strategic planning and operations for the legislative team.

Joseph received her PhD in Cell and Molecular Biology at Emory University; graduated with an MS in Developmental Toxicology from the University of Illinois, Urbana-Champaign; and earned her BS in Animal Sciences from the Pennsylvania State University.

THE PAST, PRESENT, AND FUTURE OF TELEHEALTH

A CONVERSATION WITH AMWELL CO-CEO IDO SCHOENBERG

In 2020, we've seen a surge in demand for and attention to telehealth services due to the COVID-19 pandemic. Amwell (NYSE: AMWL), formerly American Well, is one of the leading providers of telehealth services in the United States. *The Pulse* sat down with Chairman and co-CEO Ido Schoenberg to learn about the company, its culture, and the future of telehealth globally.

Ido Schoenberg, MD

Co-CEO

Amwell

***The Pulse*: Can you please share a brief overview of your background?**

Ido Schoenberg: I am a doctor, and as you can see, I'm not young anymore. This is my fourth venture. All of our companies had one mission in common: to truly improve healthcare and the way it is accessed. My brother Roy and I started Amwell about a decade and a half ago, and we have been at it since then. We recently went public and still see a big future for the company for decades to come.

To give you a few examples of prior ventures, I started a company called iMDsoft, which automates intensive care units and operating theaters, together with my wife. We were one of the first, if not the first, to create a virtual ICU. This company was sold years later to TPG, but I left it sort of halfway through the life cycle. You can tell when I left because you can see how sales went up dramatically when my wife took over as CEO [laughing].

We also built a company called CareKey, which creates personal health records and care management solutions for health insurance companies. This company was later acquired by TriZetto, which is now part of Cognizant. It was one of our initial experiences trying to connect participants in the care continuum who hadn't been connected before – namely nurses and care coordinators in health plans with consumers with serious illness.

***The Pulse*: You founded Amwell in 2006 - a time when most people were not yet thinking about virtual care delivery. How did you decide to enter the telehealth space?**

IS: When we started Amwell, it was a pretty daring idea, especially considering it was illegal at the time. Things that we take for granted today, like the Zoom conference we are talking through right now, those didn't exist 15 years ago. At the time, healthcare was focused on documentation and

> "The whole notion of Amwell really started from this idea that care does not need to be provided in the same place that care is rendered."

everyone was obsessed with electronic medical records, but Roy and I believed the main challenge was access.

E-commerce was just beginning at that time – Amazon was still selling books! We thought if we could take a page from what they were doing and try to bring technology from that world into healthcare, we could potentially democratize healthcare. We could allow many more people to get services that they normally couldn't afford or didn't have in their physical location. The whole notion of Amwell really started from this idea that care does not need to be provided in the same place that care is rendered.

***The Pulse*: On the note of access, how have you seen telehealth transform care delivery in rural settings? What are initiatives Amwell is pushing to take this even further?**

IS: The initial step of telehealth – called telemedicine at the time – was to really overcome distance. That is a very small part, and maybe the least important part, of telehealth.

Chapter 1 is more information. Many of your devices today are connected – through IoT or your smart watch – so we can collect much more information about patients, especially chronically ill patients, in a way that is easy and safe.

Chapter 2 is once you have more data that is coming from multiple sources, you can analyze it in real time and raise flags. An example of this is the Apple Heart study

"Telehealth has the opportunity to recreate the actual model of care. Not by replicating the traditional model of care, but really by changing it. When we talk about telehealth, we are not just saying wouldn't it be great to talk to your doctor from home. There is so much more."

that we did together with Stanford University. Hundreds of thousands of people through the Apple Watch were connected to an algorithm created at Stanford. When there were suspicious patterns, they were further processed for atrial fibrillation that could have killed them or left them in a wheelchair for the rest of their lives. Indeed, many people found out they had this diagnosis, which is easily treated once you know about it and extremely dangerous if you don't. So, there is an element of data collection, and an element of analysis.

Thirdly, the ability to create an automated loop that engages the consumer is also a very big change. I don't need to wait to see my patient in my practice anymore; as a result, care is much better, much faster, and more precise.

And then, obviously, the fact that we are connected with services that are available both online and in person allows us to do many things. It allows us, for example, to include payers in the flow. Today I don't know how much a visit will cost me or if it will be covered. The fact that the services are virtual and connected to the health plan or self-insured employers means that, in my home, I can get more options. My choice is much greater while my convenience is much improved, but I'm still talking to the people that I know and trust. In the end, once they make the decision, we can close the loop with someone knocking on my door 20 minutes later with my medication.

We are talking about something that is infinitely more efficient; we are talking about distributing high quality care to people that normally don't have access to it in a massive way, in a way that could be global. Think about this software and capability available around the world. That's what we mean when we talk about telehealth.

***The Pulse*: With COVID-19 and events like the merger of Teladoc and Livongo, we are seeing some big changes already in telemedicine. Looking at the future of what we can do with telehealth, where do you see us in 10 years versus today?**

IS: 10 years is a long time. What you are going to see is that healthcare is going to begin to move in technology speed, not healthcare speed.

However, there are many things that will not change. Trust will remain a key factor in healthcare. If I have a serious illness like cancer, I really don't want to hear it from a robot; I want a human who is empathetic to be with me. The need for care providers is not going anywhere.

But care providers will actually be bifurcated into two types: people that execute the science and are very empathetic and accurate and people that are geniuses who write the amazing algorithms that tell us what to do. Much of the middle part will be automated using natural language processing, artificial intelligence, and many other technologies.

The challenges in healthcare are still going to be there 10 years from now, unfortunately, as it relates to risk management. There is always going to be a finite amount of money available to reach a goal. I think every dollar will go much further in terms of return, but that does not make the challenge of how much to spend and how to cover it go away. So, the role of payers is not going to disappear, although it will change to accommodate everything we said earlier.

There is going to be an enormous new opportunity as it relates to patient engagement and building those new care plans. Scientists will rethink how we treat people, taking into account more information, faster analytics, and a better ability to deploy different interventions. Today,

because care is connected to location, there is enormous inefficiency. You need to replicate – you need a pediatrician every few miles so every mother can access one. Once some of what you can do is virtual, you can redistribute healthcare services in new ways and load balance in a different infrastructure.

***The Pulse*: We have seen a huge surge in demand for telehealth this year. What do you predict the lasting impact of COVID-19 will be on the telehealth market?**

IS: COVID was a giant accelerator because it forced people to stay at home – not just patients but also doctors. The numbers are pretty amazing. Last year, only 22% of U.S. providers tried telehealth. Saying it less optimistically, 78% didn't, which is surprising. This year, 80% of U.S. providers tried telehealth, and 90% of them said they are going to continue to use telehealth after the pandemic is over, and that is very important. What happened is many people tried telehealth for the first time and started to understand its power. There were a lot of barriers that were already removed, but one last critical barrier was the psychology of telehealth. For many people its not normal to interact online, and you need a little push in order to have them experience that. COVID gave that push, if you will.

What COVID did to institutions was made them realize that digital connectivity should not be an afterthought; not a hobby, not the thing you do after you finish work in the hospital after hours. Rather, it's a required infrastructure to really enable healthcare.

Interviewed by Poorwa Godbole, December 2020. Full interview available at ***whcbc.org/pulse/****.*

"In the future, the word telehealth may just disappear…it will just be called care. When I talked to my lawyer last time over the phone, we didn't call it tele-lawyer. It was just a normal interaction. That is what is going to happen in healthcare."

CHECKING-IN WITH CHENMED

AN INTERVIEW WITH ELENA CECILIA CASTAÑEDA, MANAGING DIRECTOR OF PRACTICE ACQUISITIONS AT CHENMED

ChenMed is a primary care provider on a mission to provide affordable VIP care to seniors. Founded in 2013, the Miami-based company is a fully capitated, Medicare Advantage-focused medical group with over 70 centers in 10 states. *The Pulse* writer Jeremy Rubel sat down with Managing Director of Practice Acquisitions Elena Cecilia Castañeda (WG'14) to discuss her career and the company.

Elena Cecilia Castañeda (WG'14)

Head of Practice Acquisitions

ChenMed

***The Pulse*: Can you give an overview of your background and how you came into your current role at ChenMed?**

Elena Castañeda: I was always interested in health care growing up. I thought I might become a physician, but I realized I was more interested in making a systemic impact. I studied bioengineering at Harvard and then consulted for life sciences companies. I absolutely loved it. At this time, the ACA was coming into the fray, and I wanted to learn more about the powers at play. So, I made a professional transition to business school to expand beyond life sciences. Honestly, after visiting several business schools, there was no question that Wharton's Health Care Management (HCM) program was the best one out there. I enrolled and I loved everyone that I met, all with a great passion for health care.

My first job out of MBA was at ChenMed. They were launching a management services organization (MSO) and I was asked to lead physician incentives. It was a big jump to go from the lofty theoretical readings we did in school to the messy business of understanding primary care physicians. I was working with physicians who had no idea how value-based care works, and many still do not. Long story short, I am back at ChenMed after some time at a startup and then Optum, and now I am leading practice acquisitions for the company.

***The Pulse*: Before ChenMed, you helped manage Optum's value-based care provider network. How does ChenMed's approach to value-based care compare to a national payer-provider like United-Optum?**

ECC: At Optum, many providers have been acquired over time and they are not all fully capitated. I worked across Optum's 20 medical groups and saw a lot of variation. At ChenMed, we are an entirely staffed model. ChenMed is entirely senior-focused while Optum accepts the full range of patient ages and their corresponding insurance. This can make managing spend more difficult because you need to be totally committed to value-based care. Not just the physician, but the whole practice needs to focus on care coordination, follow ups, and evidence-based treatments. I sometimes compare Optum to the Articles of Confederation with different colonies and charters, while ChenMed is more like the United States operating under one Constitution.

> "Physicians love that we are a PCP-led organization and the idea of working at a company that wants them to be the best PCP they possibly can be."

***The Pulse*: How do you identify attractive physician groups to acquire?**

ECC: Of course, we look at the size of the practice, how well they are run, and their location. But often we convince new physician groups to join ChenMed because of our mission. Physicians love that we are a PCP-led organization and the idea of working at a company that wants them to be the best PCP they possibly can be.

Many physicians realized during Covid that fee for service is not working and have rethought their businesses. There is something wrong when you pay for the services completed rather than for the outcomes. These realizations have led to several attractive acquisition targets because the physicians now understand the differentiated value proposition of joining ChenMed.

***The Pulse*: After ChenMed acquires a physician group, how do you integrate the group?**

ECC: We have a turnkey training program for physicians. We make sure physicians feel like they have a say as they

"During the pandemic, we had to quickly rethink how we run our business. We started offering virtual visits to our patients. We redoubled our efforts to keep in contact with patients, establishing a check-in program called 'love calls.'"

are brought into the organization, and that is not hard to do in a physician-led company. Naturally, we integrate the contracts, and we make sure patients have all their questions answered.

Very importantly, we integrate the IT. We have a common electronic medical record (EMR) system across our organization. It has taken years to develop internally. Our EMR program was built from the ground up for a value-based care environment. I have seen a variety of EMRs, and many are usually just fancy billing systems. We do not believe in that at ChenMed. That is not in the interest of the patients. So that is a critical component of the integration. The Pulse: Can you say more about how ChenMed's EMR works and how it contributes to success for the organization?

ECC: We do a lot of design thinking. What does the physician need to know about the patient? How are they doing? What is going on in their family environment? We try to record all the factors that might influence the patient's well-being. The patient may have come in for a cold, but that does not mean we should ignore other conditions. The EMR is designed to encourage us to think about the patient holistically every time we see them.

***The Pulse*: ChenMed emphasizes its strong physician culture. What do you do to create a strong culture and how is this a competitive advantage as a value-based care provider?**

ECC: Physicians are at the helm of everything we do. We design everything by asking how to make this a great place for physicians to work. Besides the fantastic value proposition and smaller patient panels – just 400-500 patients to allow for deeper relationships – we have community events like Wellness Wednesdays and support continuing education with time off. We are mission driven and many PCPs became doctors because they are mission driven. Our physicians have a happier experience and a better lifestyle.

***The Pulse*: What is ChenMed doing to help fight the pandemic and keep vulnerable seniors safe?**

ECC: Our organization focuses on a needy population, low to moderate income seniors. During the pandemic, we had to quickly rethink how we care for patients. We started offering virtual visits to our patients. We redoubled our efforts to keep in contact with patients, establishing a check-in program called "love calls." We have tried to lessen the burden of the pandemic by, in some cases, helping seniors with their laundry or their cooking. Our goal is to make sure our patients are happy and healthy. Whatever we need to do to achieve that goal, we have done it.

Additionally, our organization has invested in educating our patients about the value of the vaccine. Our patients trust us as their health experts. We have been working to make sure each of our patients has access to a vaccine in each of our markets and demonstrating the value of vaccines by getting our front-line staff vaccinated and sharing that with patients. The pandemic has disproportionately impacted the elderly and vaccines are one of our best tools for addressing the pandemic.

***The Pulse*: ChenMed is family-owned and family-managed. How does that impact the culture?**

ECC: Because we are family-owned and privately held, it is that much easier to focus on our vision to to become American's leading primary care provider. For our leadership team, this is not just a job, but a calling. It's a fantastic culture that helps promote social justice through health care. We do not have to answer to Wall Street on a quarterly basis. We can focus on our vision and our mission and then just go do it.

***The Pulse*: What advice do you have for Wharton students about how to advance in their careers?**

ECC: Take risks. Learn as much as possible. When you are in school, it is difficult to fully envision where you are going to be in 5 years. I never expected that I would go from one company, to a startup, to a public company, and then back to the same company I started at. But because I took risks, I have become more versatile. If you are in the Wharton HCM program, you have the raw skills to succeed in health care, but it is critically important to take risks and to be willing to learn. And frankly, health care needs the brains that the HCM program trains. There is no end to the challenges in delivering better health and the beautiful nature of caring for people continually inspires.

Interviewed by Jeremy Rubel, January 2021.

Perspectives on Leadership and Equity

Understanding the impacts of the social determinants of health on the wellbeing of patients has come to the forefront during the pandemic. What are the long term impacts of the isolation during covid on mental health? What are the largest issues when it comes to all the variables surrounding a patient's health and what are the best ways to fix this? How have large academic centers adapted their model to provide care in a more meaningful way to its patient population? As part of the expansion of the WHCBC this year, we have pre-recorded exclusive interviews with leading individuals in the field to better understand and assess these questions.

Interview recordings are available to attendees only.

Robert Accordino, MD
Chief Mental Health Officer
Quartet Health

Gary Butts, MD
Executive Vice President for Diversity
Mount Sinai Health System

Conrod Kelly
Executive Director, Global Health Equity
Merck

Kevin B. Mahoney
Chief Executive Officer
University of Pennsylvania Health System (UPHS)

Andrew Renda, MD
Associate Vice President
Humana

Tabassum Salam, MD, MBA (WG'20), FACP
VP Medical Education
American College of Physicians

Ashlee Wisdom
Founder & CEO
Health In Her HUE

Health Care at Wharton

The conference supports multiple health care focused student organizations. These provide MBA and graduate students with opportunities to build professional skills, network with fellow students and potential employers, and create impact in external organizations ranging from start-ups to hospitals, Fortune 500 companies, and health organizations in developing countries.

Wharton Health Care Management Department

The Health Care Management Department is the Wharton School's base for scholarship, education, and innovative thinking related to the business, management and policy of health care services, health care technology, and health care financing. The department sponsors three educational programs: the PhD in Health Care Management and Economics, the MBA Program in Health Care Management, and the BS in Economics with a Concentration in Health Care Management and Policy.

Website: **hcmg.wharton.upenn.edu**

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Janice Singleton
Administrative Coordinator, MBA Program in Health Care Management

Wharton Health Care Club

The Health Care Club organizes professional and social activities for all Wharton graduate students who are interested in exploring opportunities in the health care industry. Members share their knowledge and perspectives in addition to interacting with current industry leaders to develop an understanding of the issues facing hospital, physician, managed care, pharmaceutical, biotechnology, and medical device organizations.

Website: **www.whartonhealthcareclub.org**

Wharton Digital Health Club

The Digital Health Club is dedicated to providing Wharton Students with:

- Education about the field of digital health
- Experience through club sponsored activities
- Networking/Career opportunities

The Wharton Digital Health Club also strives to create an alliance of Penn schools focused on creating and maintaining a health IT start-up community within Philadelphia. The WDHC organized career treks to digital health companies and sponsors numerous events including analytics consulting projects and speaker events.

Website: **groups.wharton.upenn.edu/wdhc/about/**

Wharton Global Health Volunteers

Wharton Global Health Volunteers (WGHV) enables Wharton MBA students interested in health care to participate in global health projects in developing countries around the world. WGHV trips are student-organized and student-led.

Students work in teams of 3-6 with small non-profit organizations on the ground to tackle some of their most critical issues such as operations and financing. Projects typically take place for 10-14 days during winter, spring and summer breaks. Recent projects have included: developing a business education and health care entrepreneurship workshop for medical and pharmacy students in Tanzania, creating a marketing strategy to promote rehabilitative services in India, and developing strategies for creating operational efficiencies and increasing funding for a hospital in St. Lucia.

Some of WGHV's long-term partners include Aravind Eye Hospitals in India, the Association of Private Health Facilities in Tanzania, and St. Jude Hospital in St. Lucia. WGHV continues to reach out to partner organizations such as Médecins Sans Frontières to further broaden its footprint.

Website: **groups.wharton.upenn.edu/wghv/about/**

Wharton Health Care Management Alumni Association

Since its inception in 1971, the Wharton Health Care Management program has produced nearly 1,300 graduates who now represent all of the major sectors within the health care industry. The Wharton Health Care Management Alumni Association was founded to enable alumni of the program to continue to participate in a variety of professional development, networking and community service activities across the country — and around the world.

Website: **www.whartonhealthcare.org**

Penn Biotech Group

PBG is a cross-disciplinary, graduate student run organization at the University of Pennsylvania focusing on addressing the challenges and obstacles facing the life sciences industry. The club draws members and expertise from graduate programs at Penn, including the Wharton School, the School of Engineering and Applied Sciences, the Law School and the School of Medicine, as well as the larger life sciences community of Southeastern Pennsylvania. Our multidisciplinary teams have worked successfully for both Fortune 500 and start-up companies, consulting on real life projects from Strategy to marketing, from Operations to IP.

Website: **pbgconsulting.org**

Who We Are

For the past 26 years, the Wharton Health Care Business Conference is the University of Pennsylvania's largest, student-led conference. With over 500 annual attendees, the Wharton Health Care Business Conference is a renowned industry forum for industry professionals, academics, and students to meet and discuss the critical challenges and opportunities facing the industry today. Each year's conference strives to bring together an impressive list of industry leaders to share how their organizations aim to innovate at the frontiers of health care.

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