



HARVARD
T.H. CHAN

SCHOOL OF PUBLIC HEALTH

Department of Global Health
and Population

6th Annual

State *of* Global Health
Symposium



Global Health
and Technology

Thursday, March 28, 2019
Rotunda, Joseph B. Martin Conference Center
77 Avenue Louis Pasteur, Boston, MA

BACKGROUND

Technology is transforming our world today and has the potential to dramatically improve human health. In the past decade, we have witnessed huge leaps in the capabilities of technology with the advancement in new low-cost diagnostics and treatments as well as machine learning, artificial intelligence, data science, communications, and more.

However, in relation to technologies for global health three challenges are evident: (i) a technology that is needed is not available (ii) technology is available but is not accessible or affordable and (iii) technology is available and affordable but not widely used.

While investments in research and development could help address the first challenge, the second and third challenges of accessibility/affordability, and suboptimal use also need addressing.

While new technologies offer great promise for impact, most new technologies actually fail to have population wide impact because of challenges around their uptake and diffusion. So an important question that arises for policy makers, funders and innovators is “Why do so many great technologies remain on the shelf, when they could be improving population health?”

Evidence suggests that despite the best research and development producing new technologies, there are policy, regulatory, legal, behavior change, environmental and other issues that hinder scaling new technologies for improving health outcomes.

The 6th Annual State of Global Health Symposium will aim to explore emerging and available technologies that have the potential to transform global health. Through case examples highlighting both successes and challenges, we will explore the potential impact of emerging technologies that assist in diagnostics, treatment, and analytics.

The Symposium will not just highlight the latest technologies, but will also explore more deeply what makes a viable and scalable solution. The participants in the Symposium will debate key issues that cut across new frontiers in technology and discuss how to better harness existing and new technologies, by creating an enabling environment for their uptake and use to positively impact population health, while effectively managing unintended consequences. We will work to identify some of the underlying constraints to scaling readily accessible and affordable technologies and conceptualize new pathways to achieving population level equitable impact.

AGENDA

2:00 p.m. Welcome and Opening Remarks

Marcia Castro, Andelot Professor of Demography, Chair, Department of Global Health and Population

Ashish Jha, Dean for Global Strategy and K.T. Li Professor of Global Health at the Harvard T.H. Chan School of Public Health; Director, Harvard Global Health Institute

2:10 p.m. Keynote Address: Trade-offs Between Effectiveness, Equity and Sustainability of Emerging Health Technologies in LMIC

Adolpho Rubenstein, National Secretary of Health, Argentina

2:30 p.m. Panel: Transformative Technologies for Global Health

Gauri Angrish, Founder & CEO at CAREDOSE

Thomas Burke, Chief, Division of Global Health and Human Rights, Emergency Department, Massachusetts General Hospital; Associate Professor of Emergency Medicine, Harvard Medical School

Phuong Pham, Director of Evaluation and Implementation Science at the Harvard Humanitarian Initiative (HHI); Assistant Professor at the Harvard Medical School and Harvard T.H. Chan School of Public Health

Moderated by: Winnie Yip, Professor of the Practice, Global Health Policy and Economics

3:10 p.m. Keynote Address: Making AI Work for Global Health – Moving Beyond the Hype

Sema Sgaier, Co-Founder and Executive Director, Surgo Foundation

3:30 p.m. Panel: From Concept to Reality: Integrating Technological Innovations for Real World Impact

Richard Cash, Senior Lecturer on Global Health

Heather Mattie, Executive Director, Master's Program in Health Data Science

Trishan Panch, Co-founder and Chief Medical Officer at Wellframe

Moderated by: Rifat Atun, Professor of Global Health Systems

4:10 Announcement of Poster Awards

4:15 p.m. Innovation and Global Health Systems Student Presentations

w-ATMs
Panacea
HERA
ZakaMed
Medication Fraud Prevention
Hurricane Gardens

Moderated by: Khalil Ramadi

4:45 p.m. Views from Participants: How can we Harness New Technologies for Global Health?

Rifat Atun, Professor of Global Health Systems

4:55 p.m. Closing Remarks

Rifat Atun, Professor of Global Health Systems

5:00 – 6:00 p.m. Digital Poster Session and Networking Reception

Please enjoy food & drink while viewing our inaugural digital poster session in the 2nd Floor Lounge

SPEAKER PROFILES

Gauri Angrish is the Founder & CEO of CAREDOSE, a MedTech company that ensures & tracks medicine adherence from supply chain to consumption, while creating big data for public & private healthcare entities. She is a Forbes Asia 30 under 30 Honouree (Healthcare and Science), a certified NASDAQ Milestone Maker, a TEDx Speaker, and has received multiple patents & approvals (India & Global). With a belief that technology in healthcare has the power to impact and alleviate multiple lives, Gauri studied Biotechnology with focus on cardiac stem cells from the University of Nottingham. After that Gauri chose to experience the business side of healthcare in the Pharmaceutical & Medical Product vertical at McKinsey & Company. Here, while interacting with big pharma companies, she realized that medicine non-adherence was a huge unsolved problem. She left her job to pursue solutions to this problem. She brought together an ideal team of co-founders, advisors and engineers to create CAREDOSE and transform healthcare. Launched in 2018, CAREDOSE is already working with some leading names in Healthcare including the World Health Organization, Clinton Health Access Initiative and USAID on a public health project with the Central TB Division, Government of India along with MAX Healthcare and Apollo Hospitals in Private Health.

Rifat Atun, MBBS, MBA, FRCGP, FFPH, FRCP, is Professor of Global Health Systems at Harvard TH Chan School of Public Health and the Faculty Chair for the Harvard Ministerial Leadership Program. In 2008-12 he was a member of the Executive Management Team of the Global Fund as Director of Strategy, Performance and Evaluation. In 2006-2013 he was a Professor of International Health Management and Head of the Health Management Group at Imperial College London. Professor Atun's research focuses on analysis of health system performance and reform, and innovation in health systems. Prof Atun has advised many governments on health system reform, and worked with the World Bank, WHO and other leading organizations. He worked at the UK Department for International Development Health Systems Resource Centre and has been involved with health technology and biotechnology ventures as an investor, founder and director.

Thomas F. Burke, MD, FACEP, FRSM is Chief of the Division of Global Health Innovation at the Massachusetts General Hospital (MGH) in the Department of Emergency Medicine, and Associate Professor at Harvard Medical School and the Harvard T.H. Chan School of Public Health. Dr. Burke has extensive experience as a leader in the global health arena since 1994. Current active programs are focused on developing innovative solutions to intractable challenges confronting the poor and vulnerable - principally targeting maternal, newborn and child emergency conditions. Dr. Burke leads MGH's award winning innovative programs addressing postpartum hemorrhage, newborn and infant respiratory distress, and the anesthesia gap. Dr. Burke is widely recognized as an expert on disruptive innovations for the poor, is author of over 115 scientific manuscripts and two books, and currently holds several major prestigious grants. He is often invited to speak at high profile forums and leading universities around the globe. Dr. Burke serves on the WHO and FIGO steering committees on postpartum hemorrhage, the Harvard Medical School Admissions Committee, and the Harvard University Center for African Studies.

Richard A. Cash, MD, MPH began his career in international health over 50 years ago in Dhaka, Bangladesh where he and colleagues conducted the first clinical trials of Oral Rehydration Therapy (ORT) in adult and pediatric patients, with cholera and with other enteric infections. This led to further work with BRAC, now the world's largest NGO, on scaling up ORT programs in Bangladesh, eventually reaching 13 million mothers and documented in two books: "The Simple Solution"; and "From One to Many: Scaling Up Health Programs in Low Income Countries". He has continued to work and teach on issues of infectious diseases including "Making TB History". Lastly, as the co-editor of the WHO "Casebook on Ethical Issues in International Health Research" he contributes to the field of research ethics. He holds a number of appointments in international public health institutions. In 2007 he was presented with the Prince Mahidol Award in Public Health for his work on ORT and in 2011 received the Fries Prize for Improving Health.

Marcia Castro, MA, PhD, is Andelot Professor of Demography and Chair of the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health. She is also associate faculty at the Harvard University Center for the Environment and the Harvard Center for Population and Development Studies. At Harvard, she serves as a member of the Faculty Advisory Committee of the Brazil Studies Program, a member of the Executive Committee of the David Rockefeller Center for Latin American Studies, and a member of the Center for Geographic Analysis Steering Committee. Her research focuses on the identification of social, biological, and environmental risks associated with vector-borne diseases in the tropics, with the ultimate goal of informing the planning, implementation, and evaluation of control interventions. She is currently conducting a study to evaluate the use of larviciding in fish ponds in the Brazilian Amazon, and she is part of the Amazonia International Center of Excellence in Malaria Research, funded by the National Institutes of Health. Dr. Castro is also working on the epidemiology and impacts of arboviruses (dengue, Zika virus, and chikungunya) in Brazil, on issues of human mobility and asymptomatic malaria infections in the Brazilian Amazon, as well as on the potential impacts of extreme climatic events on malaria transmission in the Amazon. Dr. Castro earned a PhD in Demography from Princeton University.

Ashish Jha, MD, MPH is the Dean for Global Strategy and K.T. Li Professor of Global Health at the Harvard T.H. Chan School of Public Health and the Director of the Harvard Global Health Institute. He is also a practicing General Internist at the VA Boston Healthcare System and Professor of Medicine at Harvard Medical School. Dr. Jha received his MD from Harvard Medical School and then trained in Internal Medicine at the University of California in San Francisco. He completed his General Medicine fellowship at Brigham & Women's Hospital at Harvard Medical School and received his MPH from the Harvard T.H. Chan School of Public Health. His research endeavors focus on improving the quality and costs of health care systems with a specialized focus on the impact of policies. Dr. Jha has published over two hundred empirical papers and writes regularly about ways to improve health care systems, both in the U.S. and globally. Dr. Jha was elected as a member of the National Academy of Medicine in 2013.

Heather Mattie, MS, PhD, is an instructor of data science and the Executive Director of the Health Data Science Master's program in the Department of Biostatistics at the Harvard T.H. Chan School of Public Health. She teaches

several courses including Introduction to Data Science, Reproducible Data Science, and Data Science II: Deep Learning. Her research interests include methods for minimizing algorithmic bias, methods for social network data imputation, the estimation and prediction of tie strength in large-scale social networks, and studying the causes and potential pathways of improvement for health disparities. Heather is also highly involved in the diversity and inclusion efforts of the School and teaches and mentors underrepresented minority students each summer as part of the Summer Program in Biostatistics and Computational Biology hosted by the Department of Biostatistics. Heather also works as a data scientist for Wellframe, a Boston-based digital health company, working to improve health management targeting efforts.

Trishan Panch, MD, MPH, is a primary care physician and Co-Founder and Chief Medical Officer of Wellframe - a Boston-based digital health company. He works at the intersection of technology and health systems: creating strategies for digital transformation for large healthcare organizations and developing products and services that re-engineer care processes, empower patients and create more efficient and responsive health systems. His research work involves the application of machine learning methods on large scale multimodal clinical data sets. He is an Instructor at the Harvard T.H. Chan School of Public Health, a part time lecturer in Health Sciences and Technology at MIT, and the inaugural recipient of Harvard's Public Health Innovator of the Year award. He has founded and led the clinical, product, design, consumer experience and data science teams at Wellframe and co-led the company itself from inception. He serves on the board of Wellframe and the Innovation Advisory Board of Boston Children's Hospital and has advised the Gates Foundation, The Commonwealth Care Alliance and served on the expert panel of the health systems program of the World Health Organization.

Puong Pham, PhD, MPH, is an Assistant Professor at the Harvard Medical School and Harvard T.H. Chan School of Public Health and Director of Evaluation and Implementation Science at the Harvard Humanitarian Initiative (HHI). She has over 15 years of experience in designing and implementing epidemiologic and evaluation research, technology solutions, and educational programs in ongoing and post-conflict countries such as northern Uganda, Democratic Republic of the Congo, Rwanda, Central African Republic, Iraq, Cambodia, Colombia and other areas affected by mass violence and humanitarian crisis. She co-founded Peacebuildingdata.org (a portal of peacebuilding, human rights, and justice indicators) and [KoboToolbox](http://KoboToolbox.org) (a suite of software for digital data collection and visualization). Dr. Pham joined HHI after holding the positions of Director of Research at the University of California – Berkeley's Human Rights Center and Adjunct Associate Professor at Tulane University's Payson Center for International Development.

Adolfo Luis Rubinstein MD, MSc, PhD is the National Secretary of Government for Health of Argentina. His priorities are the expansion of effective UHC for the uninsured; implementation of health coverage and pricing policies of new technologies; and prevention and control of NCDs. He is a family physician and Professor of Public Health at the University of Buenos Aires (UBA) and also a distinguished senior scholar of the Bernard Lown Scholars in Cardiovascular Health Program at Harvard T.H. Chan School of Public Health. He received a master's degree in Clinical Epidemiology from Harvard, a doctoral degree in

Public Health from UBA, and a diploma in International Health Economics from York, UK. Dr. Rubinstein was Director General of the Institute for Clinical Effectiveness and Health Policy. He was PI of many research studies focused on NCDs in Latin America, sponsored by NIH and other international agencies. He published more than 100 papers in peer-reviewed journals focused on epidemiology, implementation science, and health policy.

Sema Sgaier, MA, MSc, PhD, is an Assistant Adjunct Professor at the Harvard T.H. Chan School of Public Health and an Affiliate Assistant Professor, Global Health at the University of Washington. She also serves on the board of the Bill & Melinda Gates Foundation's Alumni Network. Sema is Co-founder and Executive Director of Surgo Foundation, a privately funded action tank whose mission is combining a customer obsessed agenda with a thinking in systems to solve complex global development problems. Dr. Sema Sgaier leads Surgo Foundation's strategy, operations, and partner relations. She works at the intersection of behavior, data, and technology drawing on her extensive experience in policy, strategy, and management of development programs. Sema has led several large-scale programs, as well as research and evaluation projects, and has worked with governments in India and Africa on public-health policy and large-scale delivery. Prior to joining Surgo Foundation, Sema held several roles at the Bill & Melinda Gates Foundation (BMGF). She led a portfolio on voluntary medical male circumcision for HIV prevention across eastern and southern Africa. As part of BMGF's India Country Office, Sema led the scale-up of the foundation's HIV prevention program (Avahan) in several states, managed its transition to the government of India, and developed data platforms for decision-making. Before joining BMGF, Sema was a neuroscience and genomics scholar at Harvard Medical School and a fellow with the Centre for Global Health Research. Sema was selected as a Rising Talent by the Women's Forum for the Economy and Society.

Chi-Man (Winnie) Yip, PhD is Professor of the Practice of Global Health Policy and Economics in the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health and also Faculty Director of Harvard China Health Partnership. Dr. Yip was previously a Professor of Health Policy and Economics at the Blavatnik School of Government, University of Oxford. Dr. Yip holds a PhD in Economics from the Massachusetts Institute of Technology. Her research focuses on the design, implementation, evaluation and scaling up of health system interventions, for improving affordable and equitable access to quality health care, especially for the poor. Her approach typically involves large-scale social experimentation of health system interventions by using experimental design to integrate the transformation of financing, incentives, organization, management and technology. With a network of Chinese universities, Dr. Yip's ongoing research projects cover over 25 million people in the low income provinces in China. In India, Dr. Yip leads an interdisciplinary team of experts in social, medical and management sciences to collaborate with state governments (one being Odisha) to transform their health care systems for the benefits of the people they serve. She is also co-chair of the Advisory Council of the newly-established Health System Transformation Platform—a platform to facilitate cross-state learnings and innovations in health system transformations.

STUDENT PRESENTERS

Innovation and Global Health Systems, Fall 2019

w-ATMs

Cristina Alonso*
Bhargav Krishna*
Alexander Peters
Anshu Shroff
Sriram Venkitaraman

Panacea

Rob Filler
Johnattan Garcia Ruiz
Adlet Tulegenov
Vivian Zhang*

HERA

Claudia Castillo
Matthew Hughsam
Aral Sürmeli*
Helen Tesfaye

ZakaMed

Ernest Barthélemy*
Jingyi Chen
Monica Nirmala
Sai Lone Tip

Medication Fraud Prevention

Ladislav Cervenka*
Jennifer Fish
Sarah Moselle
Subarna Shrestha
Ting Zhang
Yun Zhu

Hurricane Gardens

Aya Kagota
Emily LaRose
Anthony Alan Morgan
Isha Nirola*
Sherine Andreine Powerful
Dana Sievers

**Presenting students*

DIGITAL POSTER SESSION

Our digital poster session will feature two sessions, each with 10 posters. A bell will signal the transition between sessions A and B.

Session A 5:00 – 5:30 p.m.

Ugandan Study Participants Experience Electronic Monitoring of Antiretroviral Therapy Adherence as Welcomed Pressure to Adhere

Jeffrey I. Campbell, Nir Eyal, Angella Musiimenta, Bridget Burns, Sylvia Natukunda, Nicholas Musinguzi, Jessica E. Haberer*

Subnational Estimation of Tuberculosis Incidence in Brazil

Melanie H. Chitwood, Marcia C. Castro, Mauro Sanchez, Patricia B. Oliveira, Daniele M. Pelissari, Gabriela DM da Silva, Ted Cohen, Philippe Glaziou, Nicolas A. Menzies*

Strengthening Financial Incentives to Improve the Quality of Primary Care in Cote d'Ivoire

Denizhan Duran, Sebastian Bauhoff, Peter Berman, Margaret Kruk*

Traditional birth attendees in Enugu State, Nigeria: Who and Why?

Eziamaka Ezenkwele, Bilikisu Elewonibi, Fausta Emegoakor, Ijeoma Itanyi, Michael Nwafor, Theophilus Nwankwo, Chinwe Achike, Matthew Eze*

Trends in availability and use of cancer medicines in six Asian countries working towards universal health coverage

Alessandra Ferrario, Peter Stephens, Dennis Ross-Degna and Anita Wagner*

Understanding the perceptions of teenagers, providers, and administrators toward teenage pregnancy in Peru: A qualitative case study in the Amazonas Region

Amanda M. Gutierrez, Jessica Niño de Guzman, Felipe Sarmiento, Ana Langer*

Decision-making in pediatric oncology during challenging clinical situations: the case of Hospital Infantil Teletón De Oncología in Queretaro, Mexico

Akhil Mehta, Frances Tao, Lourdes Vega-Vega, Irini Albanti, Jonathan Marron*

Mechanical properties of ESM-UBT: An ultra-low cost uterine balloon tamponade device

Kamyar Mollazadeh-Moghaddam, Michelle Dundek, Anuj Bellare, Anderson Borovac-Pinheiro, Thomas Burke*

Uncovering Inequitable Access to Vaccination Programs by Nomadic Bedey Children of Bangladesh

Lisa Parvin, Richard Cash, Edward Ryan, Subhash Chandir, and Byron Good*

Proposing the Governance Framework for a Federated and Interoperable Personal Health Record in India

Nivedita Saksena, Nishant Kishore, Shubhangi Bhadada, Tony Raj, Rahul Matthan, Satchit Balsari*

Session B 5:00 – 5:30 p.m.

Identifying patients with symptomatic cancer in primary care in Africa: A predictive modeling analysis

Hari S. Iyer, Kesaobaka Molebatsi, Neo Tapela, Scott L. Dryden-Peterson*

Technological Considerations for India's Digital Health Architecture

Nishant Kishore, Abhishek Bhatia, Abhijeet Waghmare, Angshuman Sarkar, Tony Raj, Satchit Balsari*

Implementation of an international standardized set of outcome indicators in pregnancy and childbirth in Kenya: Utilizing mobile technology to collect patient-reported outcomes

Lina Roa, Rachel Yorlets, Ishtar Al-Shammari, Christina Akerman, Annelies Dekker, Thomas Kelley, Ramona Koech, Judy Mutuku, Nyarango Robert, Doriane Nzorubara, Nicole Spieker, John Meara, David Ljungman*

Spatio-temporal dynamics and socio-economic correlates of homicides in Fortaleza, Brazil

Sudipta Saha, Antonio Silva Lima Neto, Marcia Castro*

Predictions of Disease Spikes induced by Climate Variability: A pilot real time forecasting model project from Maharashtra, India

Sujata Saunik, Omkar Khare, Yusuf Kabir*

Differences in Healthcare Provider Diabetes Knowledge: Evidence from the Indonesian Family Life Survey

Dorit Stein, Nikkil Sudharsanan, Jennifer Manne-Goehler, Pascal Geldsetzer*

HERA: Using mHealth to increase child vaccination and maternal prenatal care takeup among Syrian refugees in Turkey

Aral Sürmeli, Matt Hughsam, Claudia Castillo, Helen Tesfaye*

Pilot Evaluation of an mHealth intervention to improve postpartum maternal and child health outcomes among informal migrants in Mae Sot, Thailand.

Thein Min Swe, Shiyi Zan, Sloane Phillips, Gaew Lertsuridej, Nyunt Naing Thein, Felipe Sarmiento, Mick Sukcharoen, Katharine Morley, Shreya Patel, Phuong Pham*

The Impact of a Homestead Gardening Program on Dietary Behavioral Change – A Mixed-Methods Evaluation of the FXB Village Model in Kigali, Rwanda

Yucheng Tsai, Lindsay M. Jaacks, Aisha K. Yousafzai*

Barriers to accessing services and resources amongst Intimate Partner Violence victims: A qualitative study in Fortaleza, Brazil

Noor Zaniat, Clariana Vitória Ramos de Oliveira, Marcia Machado, Marcia C. Castro*

**Presenting authors*

**Digital Poster Session
&
Networking Reception**

**~ Please join us for networking over
food and drink ~**

**The Department's inaugural digital
poster session will be held in the 2nd
Floor Lounge from 5:00-6:00pm**

NOTES

The 6th Annual State of Global Health Symposium is part of the Department of Global Health and Population's

**2019
Global
Health
Week**



March 25-29, 2019

*Thank you
for joining us!*

Department of Global Health and Population | 665 Huntington Avenue
Building 1, 11th & 12th floors | Boston, MA 02115

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