

HARVARD PILGRIM
HEALTH CARE INSTITUTE

Annual Report

2022



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MISSION

The Institute's mission is to improve health care delivery and population health through research and education, in partnership with health plans, delivery systems, and public health agencies.

WHO WE ARE

The Department of Population Medicine (DPM) in the Harvard Pilgrim Health Care Institute is a research and teaching collaboration between Harvard Pilgrim Health Care and Harvard Medical School. The Department is housed in the Harvard Pilgrim Health Care Institute, a limited liability corporation of Harvard Pilgrim Health Care. We are one of 15 Harvard Medical School affiliates. In 2021, Harvard Pilgrim Health Care combined with Tufts Health Plan, creating Point32Health. The Institute is also part of Point32Health and now partners with both health plans.

As the nation's first medical school appointing department based in a health plan, we're strategically positioned to improve population health and health care delivery locally, nationally, and internationally. We're distinctive for our scope, expertise, and collaborations.

Our mission and activities are highly consonant with the National Academy of Medicine's advocacy for a national Learning Health System—one that incorporates evidence-based practices into routine care, captures new knowledge as part of the ongoing delivery of care, and then applies new knowledge in a timely manner.

We are **45** core faculty, **19** research scientists, **25** fellows, and **197** staff working with hundreds of institutional and individual collaborators around the globe.



Dear Colleagues,

Although 2022 marked our 30th anniversary, we were too busy looking ahead to dwell on our accomplishments. Or on how much our world and our work have evolved. But they certainly have.

Our contribution to understanding clinical aspects of COVID-19's prevention, transmission, and management has continued to grow (now over 100 publications¹, page 8). We also greatly expanded our research on the impact of the pandemic on the health of the population at large as well as on the New England population that Point32Health serves. This work has given us and Point32Health leadership a much clearer sense of the ability of many of our most vulnerable members to obtain needed care. Examples include people with behavioral health needs and those with limited access to broadband telehealth services.

Our work on health equity has also been an important area of emphasis, cutting across multiple domains that disproportionately affect low-income, racial and ethnic minority, and LGBTQ+ communities. Examples include HIV prevention, access to care, differential treatment, food insecurity, and the built environment.

We are particularly proud of the increasing number of research activities that we conduct in partnership with Point32Health personnel and our members (see page 16). Examples include exploring reasons that children are not fully immunized; addressing the drivers of obesity treatment; and testing means of providing additional support to families of members with dementia who are living at home. Our deepening engagement with Point32Health holds important opportunities for our research. And, we believe, for the welfare of Point32Health's members.

These new and enhanced areas of applied scholarship complement the best-in-class research that has been our hallmark for decades. These include our partnerships with

the Food and Drug Administration to monitor the safety of medicines, with the Centers for Disease Control and Prevention to prevent healthcare associated infections, with the National Institutes of Health to understand the long-term health impact of prenatal and early life diet and environmental exposures and to sharpen our understanding of the health insurance drivers of better outcomes for individuals with diabetes. Our partnership with the Massachusetts Department of Public Health to automate notifiable disease reporting and to monitor the health of communities provides a strong platform for improving the health of the entire Commonwealth. Our sustained work in these fields has made measurable differences to both national and local health.

Both our long-term activities and our newer ones are important components of our goal of contributing to the creation of a learning health care system—one that embeds the development of evidence in delivery systems and then fosters the broadest possible adoption of that evidence.

We were happy to return to in-person teaching of Harvard medical students and to continue our mentoring of medical interns and residents, clinical fellows, and graduate and post-graduate students. We have also begun a new program to reach out to high school and college students, particularly from underrepresented local communities, to encourage their long-term career interest in our work and in our Institute.

This progress has taken place in the context of our refashioning the way we work together. It is increasingly clear that most of us will work in our office no more than two days per week. Many of our employees, now in 15 states, work fully remotely, perhaps with occasional trips to Boston. This hybrid model of work puts special emphasis on making the best use of our time together.

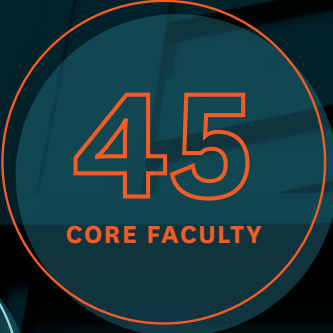
Finally, I hope this annual report communicates the enthusiasm and opportunities we see for our next 30 years.

Sincerely,

Richard Platt

Professor and Chair, Department of Population Medicine
President, Harvard Pilgrim Health Care Institute

¹ <https://www.populationmedicine.org/covid>



Faculty + Staff



DR

SE

A

DB

RESEARCH

We conduct research on individuals' behaviors and environments as well as the structures, processes, and outcomes of the health care and public health systems. Our work blends a population and public health focus, is anchored in health care delivery, and leverages unprecedented data resources derived from health care delivery systems along with methodologic expertise in analyzing those resources.

Major Institute Programs

MDPHNET: INFECTIOUS AND CHRONIC DISEASE MONITORING

Institute researchers, led by **Michael Klompas** and **Noelle Cocoros**, have a partnership of over a decade with the Massachusetts Department of Public Health (MDPH) to build and maintain a distributed data network that uses electronic health record (EHR) data to support real-time detection and reporting of notifiable diseases such as hepatitis, HIV, and tuberculosis; weekly assessment of COVID-19-like illness; and ongoing prospective monitoring for chronic conditions such as obesity, hypertension, smoking, and diabetes². The network currently covers approximately 50% of the Massachusetts population at **13** partner sites, with plans for continued expansion.

2022 MDPHnet highlights include:

- Validating and implementing automated reporting of more types of notifiable infectious diseases.
- Refining small area estimation methods to reduce the impact of underrepresentation in the western part of Massachusetts.
- Launching numerous analytic activities related to respiratory virus symptom detection, including development of an EHR-based algorithm. This tool supported MDPH's monitoring of influenza, COVID-19, respiratory syncytial virus (RSV), and other pathogens.
- • A study to examine whether individuals living with HIV are at increased risk for severe COVID-19, compared

² <https://www.espehealth.org>

to those without HIV, after accounting for underlying conditions and CD4 counts.

- • An ongoing project led by **Julia Marcus**, **Jessica Young**, and **Douglas Krakower** to estimate the HIV preexposure prophylaxis (PrEP) use needed to reduce HIV incidence among men who have sex with men to the levels targeted by the federal Ending the HIV Epidemic initiative.
- • A tool under development to help providers identify patients at risk for HIV to increase PrEP prescriptions, with sites actively contacting patients who may benefit from the medication.
- Working closely with the MDPH to refine methodologies for estimating chronic disease prevalence at the state and local levels.

NEXT-D

The Institute is one of six collaborating centers in the Duke-Harvard Natural Experiments in Translation for Diabetes (NEXT-D) consortium³. Led by faculty members **Dennis Ross-Degnan**, **Laura Garabedian**, **Christine Lu**, **Mei-Sing Ong**, and **Anita Wagner**, NEXT-D studies examine the impact of reductions in patient cost sharing on diabetes care and longer-term complications as well as adherence to medications for management of diabetes and related cardiometabolic disorders. The NEXT-D consortia have been funded by the CDC, National Institute of Diabetes and Digestive and Kidney Diseases, and PCORI since 2010, with the Institute team receiving

³ <https://nextd3.healthsciences.ucla.edu>

■ Denotes Health Equity Projects

Stephanie Argetsinger presents NEXT-D project findings at the 2022 AcademyHealth Annual Research Meeting.

three consecutive 5-year awards. Dennis Ross-Degnan is the co-chair of the Methods subcommittee, and project manager **Stephanie Argetsinger** is the co-chair of the Dissemination subcommittee.

2022 NEXT D highlights include:

- Research on the impact of Preventive Drug List coverage on medication adherence among members with pre-existing diabetes over 2 years⁴. This study found that Preventive Drug List coverage resulted in large out-of-pocket savings in key medications to manage diabetes and cardiovascular risk. Gains in adherence over 2 years were substantial for members without health savings accounts (HSA) and were minimal among those in HSA plans.
- A study on the effect of a Preventive Drug List value-based medication benefit on acute, preventable diabetes complications⁵. This work found that Preventive Drug List members with diabetes experienced decreases in outpatient and high-acuity diabetes complication episodes and low-income members also had moderate-to-large decreases in these measures. This study is the first to demonstrate that a value-based medication benefit is associated with improved health outcomes and reduced disparities.
- Research on patient and consumer preferences and needs found that members with diabetes whose deductibles were reduced experienced small-to-moderate increases in use of primary-care related services and no changes in health care expenditures⁶.
- Active engagement of junior colleagues in a variety of ongoing projects.

4 **Ross-Degnan D, Zhang F, Lu C, Argetsinger S, Lakoma M, Wharam JF.** Effects of Preventive Drug Lists That Reduce Medication Cost Sharing on out-of-Pocket Costs and Adherence over 2 Years. Podium presentation at: AcademyHealth Annual Research Meeting; June 2022; Washington DC.

5 Wharam JF, **Argetsinger S, Costa R, Clemenz J, Garabedian L, Lakoma M, Zhang F, Ross-Degnan D.** Effect of a Value-Based Medication Benefit on Acute Diabetes Complications. Oral presentation at: American Diabetes Association 82nd Scientific Session; June 2022; Virtual.

6 Wharam JF, **Argetsinger S, Costa R, Zhang F, Garabedian L, Ross-Degnan D.** Impact of Switches to Lower Deductible Plans on Diabetes Patients. Poster presentation at: AcademyHealth Annual Research Meeting; June 2022; Washington DC.



PROJECT VIVA

Led by Institute faculty, Project Viva⁷ is a landmark study of lifecourse influences on health and disease. Continuously funded by the NIH since 1998, Viva has followed a cohort of pregnant women and their (now young adult) offspring for more than two decades. Viva is now in the final year of a 7-year grant from the NIH Office of the Director to participate in the Environmental Influences on Child Health Outcomes (ECHO) Program, a consortium of 69 pregnancy and birth cohort studies around the U.S. **Emily Oken** and **Marie-France Hivert** are the Principal Investigators of Project Viva. Other Viva investigators based at the Institute include **Izzuddin Aris, Brittany Charlton, Peter James, Amy Kweller, Debby Lin, Josh Petimar, Karen Switkowski, Jessica Young,** and **Mingyu Zhang.**

2022 Project Viva highlights include:

- Receipt of a 5th cycle of continued funding award for years 20–24 of Viva’s core federal grant titled, “Prenatal environmental determinants of health in young adulthood: a lifecourse approach.”
- Completion of the Age 19 survey, with responses from **670 Moms** and **589 Young Adults.**
- Ongoing recruitment of Viva participants into ECHO, with **88%** of Viva Moms and Young Adults now having agreed to participate.
- Launch and completion of the 2022 annual survey,

7 <https://www.projectviva.org>



The Project Viva Data Operations Team gathers for a hybrid project meeting.

focused on mental health and COVID-19 follow up. Through this initiative, for the first time, the team began collecting contact information for biological fathers and non-enrolled parental figures of Project Viva kids.

- **48** publications, many of which were led by fellows and junior faculty and mentored by more senior investigators on Project Viva. Six of these publications were ECHO-wide projects, incorporating data from other ECHO cohorts alongside Project Viva data. Research published in 2022 includes the following topics:
 - Conflicting evidence suggests that maternal intake of non-nutritive sweeteners, such as Equal or Splenda, during pregnancy increases childhood obesity risk. A potential reason for the varied results is that all prior studies examined childhood body mass index (BMI) at only one timepoint and at different ages. A Viva analysis⁸ found that maternal non-nutritive sweeteners intake during pregnancy was associated with increased childhood body mass index and body fat from birth to teenage years. This finding is relevant given the escalating obesity epidemic, and continued popularity of non-nutritive sweeteners use.

8 Plows JF, **Aris IM**, Rifas-Shiman SL, Goran MI, & **Oken E**. (2022). Associations of maternal non-nutritive sweetener intake during pregnancy with offspring body mass index and body fat from birth to adolescence. *International Journal of Obesity*, 46(1), 186-193.

- The introduction of first foods after breast milk or formula provides an opportunity to shape children’s future dietary habits, setting the foundation for good nutrition and health. Research⁹ led by **Karen Switkowski** found that delayed introduction of sweets/juice, continued offering of refused foods, and early flavor/texture variety may all result in higher diet quality in later childhood.
- Earlier pubertal onset may be associated with an increased risk of chronic diseases. However, the extent to which growth in the first 5 years of life—an important developmental life stage that lays the foundation for later health outcomes—is associated with pubertal onset remains understudied. An analysis¹⁰ led by **Izzuddin Aris**, including data from Project Viva and 35 other cohorts participating in ECHO, found that faster gains in weight, length or height, or body mass index in early life were associated with earlier pubertal onset. The results suggest that children who experience faster early growth should be monitored closely for earlier onset of puberty and referred as appropriate for supportive services.

9 **Switkowski KM**, **Aris IM**, Gingras V, **Oken E**, & **Young JG**. (2022). Estimated causal effects of complementary feeding behaviors on early childhood diet quality in a US cohort. *The American Journal of Clinical Nutrition*, 115(4), 1105-1114.

10 **Aris IM**, Perng W, Dabelea D, Ganiban JM, Liu C, Marceau K, ... & Wright R. (2022). Analysis of Early-Life Growth and Age at Pubertal Onset in US Children. *JAMA Network Open*, 5(2), e2146873-e2146873.

THE U.S. FOOD AND DRUG ADMINISTRATION (FDA) SENTINEL SYSTEM

The Harvard Pilgrim Health Care Institute led the development in 2009 of the FDA Sentinel System¹¹, a program that allows the FDA to work with the nation's leading health care organizations and data providers to monitor the safety and effectiveness of marketed medical products. **Darren Toh** succeeded **Richard Platt** as the Principal Investigator of the FDA Sentinel System in September 2022. Other Sentinel investigators based at the Institute include: **Sruthi Adimadhyam, Noelle Cocoros, John Connolly, Candace Fuller, Jane Huang, Anjum Khurshid, Sheryl Kluberg, Christine Lu, Jennifer Lyons, Melody Mai, Judith Maro, Ashley Martinez, Ashish Rai, Bahareh Rasouli, Mayura Shinde, Katherine Yih, Anita Wagner, and Jenna Wong**. The Sentinel Operations Center is supported by four program managers: **Christine Halbig, Stephen Keylor, Joy Kolonoski, and Meighan Rogers Driscoll**.

Sentinel created a distributed electronic health data network. Curated data covering tens of billions of hospital stays, outpatient visits, and pharmacy dispensings remains with the participating organizations to ensure the privacy and security of patients' health information. Sentinel has performed more than **670** analyses for the FDA in support of its regulatory decision-making responsibilities. In 2022 alone, **95** analyses were actively underway. Institute investigators authored approximately **40** Sentinel presentations and publications.

In collaboration with partners at Brigham and Women's Hospital, the Harvard Pilgrim Health Care Institute is also the administrative home of the Sentinel Innovation Center, which is building a new, complementary data system that contains linked medical claims and electronic health records covering 10 million lives and developing cutting-edge methods and analysis tools to query structured and unstructured electronic health data. Guided by the Sentinel System Five-Year Strategy Plan laid out by the FDA, the Operations and Innovation Centers, together with a Community Building and Outreach Center, are developing and implementing

¹¹ <https://www.sentinelinitiative.org/>

COVID-19 Contributions: from the front lines of health care and the media

COVID-19 has had a profound, and still evolving, impact on the health care landscape. Institute investigators remain invested in studying the imprint the virus has left across society and health, resulting in 32 publications in 2022. In addition to this scholarship, they lend their expertise in myriad ways:

Clinical Endeavors

Michael Klompas, Chanu Rhee, and Meghan Baker lead the Infection Control Program at Brigham and Women's Hospital and the Dana Farber Cancer Institute in Boston. In this capacity, they oversee the hospitals' preparations and policies to safely manage COVID-19 as well as to detect and control clusters of infection.

In the Media



17

Media Mentions



2

Thought Pieces

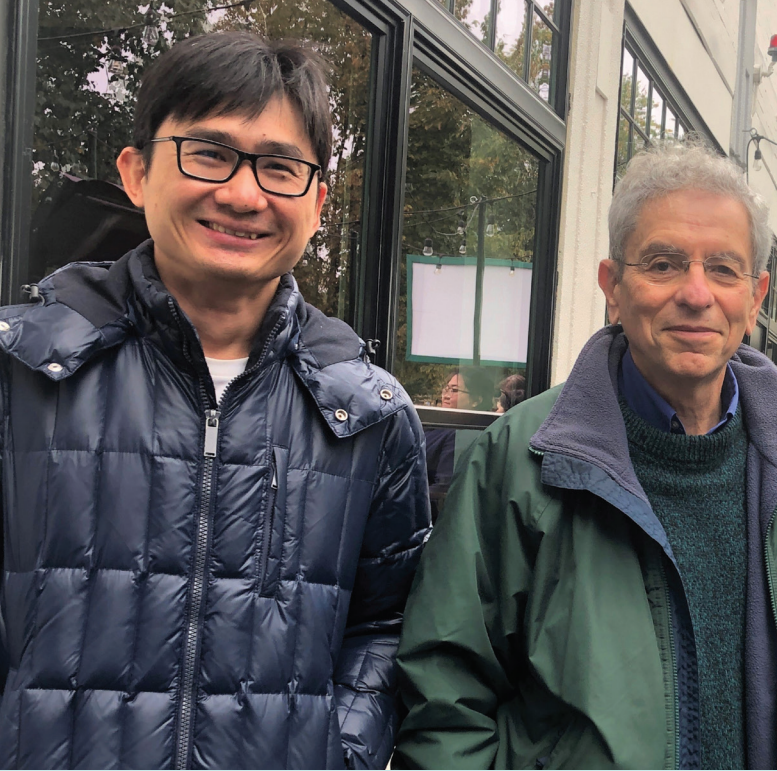


2

Radio and Television Appearances



www.populationmedicine.org/COVID



Darren Toh (left) succeeded Richard Platt (right) as the Principal Investigator of the FDA Sentinel System in September 2022.

plans to increase the efficiency and responsiveness of the Sentinel System, develop new data sources and more sophisticated methods, broaden the community of users, and extend Sentinel capabilities to allow multi-national collaboration to support assessment of the safety and effectiveness of marketed medical products. In 2022, the FDA conducted numerous activities within the Sentinel System to protect and promote public health during the COVID-19 pandemic.

Welcome to the Institute

We welcomed three new faculty members in 2022.



Anjum Khurshid is a bioinformatician and a population health researcher who develops innovative data sharing systems. He is a pioneer in research on blockchain applications for health care. He co-chairs the Institute's Diversity, Equity, and Inclusion Committee. His research focuses on health informatics, data integration, health IT policy, and patient engagement.



Hadley Stevens Smith is a health economist and a scholar in the ethical, legal, and social implications of genomics. She studies clinical, patient-centered, and economic outcomes of genomic medicine, primarily for newborn and pediatric patient populations.



Jenna Wong is a pharmacoepidemiologist whose research focuses on generating evidence to inform the appropriate and safe use of marketed medications, particularly when used beyond their labeled indications. Her work utilizes high-dimensional and complex electronic health data, where another focus of her research is on using different machine learning techniques for tasks like risk adjustment, phenotyping, and information extraction from unstructured text to enhance the utility of real-world data in pharmacoepidemiologic research.

2022 Research Highlights

As the effects of the ongoing crises of COVID-19 and health inequities continue to ripple through the health care landscape, one thing remains certain: our commitment to using the skills in our toolkit to produce real-world evidence that drives change. Here are a few examples.

COMPARATIVE EFFECTIVENESS

Honing research methods to improve care

Stepped-wedge cluster randomized trials are studies where timings of treatment initiation for clusters are randomized. These trials are increasingly used to evaluate policy and health systems interventions. **Rui Wang** and colleagues investigated¹² statistical methods that can capture heterogeneous, or differing, effects of the treatment as a function of time since the intervention was introduced in each cluster. Findings suggest that treatment effect heterogeneity may arise due to cumulative exposure and latent effects, changes in treatment themselves, or time-varying confounders affected by previous exposure levels. The team proposed a new model for assessing treatment effect heterogeneity over exposure time, developed and validated its performance, and provided practical guidance on the design and analysis of stepped-wedge cluster randomized trials in the presence of such treatment effect heterogeneity.

¹² Maleyeff L, Li F, Haneuse S, & **Wang R.** (2022). Assessing exposure-time treatment effect heterogeneity in stepped-wedge cluster randomized trials. *Biometrics*.



Populations are at the core of Institute research. Our investigators have broad expertise — in both topics and innovative methodologies — to examine the most important issues facing population health.”

— **Jason Block**
Associate Professor, Director of Research

Using decision modeling to create real-world tools to improve patient care

Patient decision aids are tools that help patients and their health care providers make shared, informed decisions about available care options. Breast cancer experts and guidelines recommend that primary care clinicians counsel women aged 75 and older of the possible benefits and harms of continuing breast cancer screening, elicit their values and preferences, and decide together on a course of action. However, clinicians report feeling ill-prepared for these conversations, showing a gap where a tailored patient decision aid can potentially make a difference. **Natasha Stout** is co-Principal Investigator on a project that is developing and testing an easy-to-use, flexible, interactive web-based conversation aid that will provide estimates of the benefits and harms of mammography screening personalized for older women’s health and breast cancer risk. The team is using state-of-the-art CISNET¹³ simulation modeling to generate detailed data that forms the ‘information backbone’ of the conversation aid. The team anticipates

¹³ <https://cisnet.cancer.gov>

Thought Leadership

As authorities in their areas of research, faculty often pen think pieces on timely, relevant topics in health care and medicine in high-impact journals and media.

■ Making the case for practical policy to improve PrEP access

July 2022 marked a decade of availability of preexposure prophylaxis (PrEP), the use of antiretroviral medications to prevent HIV infection, yet less than a quarter of the 1.2 million people in the United States who could benefit from PrEP take it. A *New England Journal of Medicine* commentary¹⁴ with lead author **Julia Marcus** and senior author **Douglas Krakower** explores the effect of the federal 340B Drug Pricing Program on the use of HIV prevention drugs, pointing to a system that incentivizes clinics to prescribe high-cost medications when effective and far less expensive options exist, leading to the widening disparities in PrEP access, impact, and equity. The authors describe the dire need for reform in the existing financing infrastructure and offer practical policy improvements that would provide access to PrEP medications based on clinical evidence rather than the potential for revenue generation.

Three measures to reduce COVID-19 transmission in hospitals in the context of Omicron

In late 2021, the increase in hospital-onset Omicron infections demonstrated the challenge of hospital-based COVID-19 transmissions throughout the pandemic. In response, **Michael Klompas** and colleague penned a *JAMA Viewpoint*¹⁵ identifying hospitals' limited testing procedures as an explanation of the unappreciated frequency of hospital-acquired infections. They outlined three additional measures hospitals could implement to reduce the risk of transmission and better protect patients and staff, recommending mandatory vaccine boosters, more frequent testing, and universal use of N95 respirators.

14 **Marcus JL**, Killelea A, & **Krakower DS**. (2022). Perverse Incentives - HIV Prevention and the 340B Drug Pricing Program. *The New England Journal of Medicine*, 386(22), 2064–2066.

15 **Klompas M**, Karan A. Preventing SARS-CoV-2 Transmission in Health Care Settings in the Context of the Omicron Variant. *JAMA*. 2022;327(7):619–620.

that use of the conversation aid will help primary care clinicians feel more supported and prepared to engage older women in shared decision making around mammography screening, and will help older women make more informed decisions around mammography screening consistent with their values.

DELIVERY SYSTEMS

Preparing health workers for precision medicine uptake

Although genetic testing can improve patient care, most health care workers are not trained to use it. A team including **Kurt Christensen** and **Emilie Zoltick** worked with Sanford Health, the largest rural health system in the United States, to evaluate a genetics education program for health care providers. More than 1,200 doctors and advanced practice providers completed a web-based program over a 2 year period. Using survey data, the research team found large improvements in providers' confidence about using genetic testing for clinical decision making. The team also showed that the program made providers more aware of help available to them and increased the perception that genetic testing was useful. The study¹⁶ provides one of the first examples of how health systems can educate their workforce at scale about genetic testing. Such programs will be critical to realize the promise of precision medicine.

■ The effects of health care worker shortages

In the U.S., COVID-19 vaccination rates remain particularly low among racial and ethnic minority groups and rural residents. While much of the discussion about low vaccination rates focuses on person-level factors, the role of the health care system—the availability of primary care physicians in a geographical area, for example—is not well understood. While primary care providers play an integral role in the counseling of patients regarding the risks and benefits of vaccination, there is a considerable shortage of them in the U.S. Nearly one quarter of the American population lives in primary care health professional shortage areas, which are concentrated in rural areas and have

16 Hajek C, Hutchinson AM, Galbraith LN, Green RC, Murray MF, Petry N, Preys CL, Zawatsky CLB, **Zoltick ES**, **Christensen KD**, Imagenetics METRICS Team. Improved provider preparedness through an 8-part genetics and genomic education program. *Genet Med*. 2022 Jan;24(1):214–224.

complex patterns of demographic characteristics. Prior studies have reported higher rates of COVID-19 infection and deaths in full-county shortage areas. A study¹⁷ led by **Hao Yu** with **Michael Klompas** and **Fang Zhang** assessed the association between COVID-19 vaccination rates and shortage area status. The study found that disparities in full-county shortage areas persisted and widened despite the CDC and Health Resources and Service Administration support for vaccinations in community health centers. The findings suggest that further efforts to target full-county shortage areas are needed to improve vaccine coverage in those areas.

When technology meant to increase access unintentionally widens divides

At the onset of the pandemic, when safe access to in-person care was limited, policymakers, health plans, and providers across Massachusetts collaborated on a broad expansion of telehealth services to safely provide people with continued health care. This coordinated response was crucial to ensure continued access to timely primary, behavioral health, and chronic disease care for residents of the Commonwealth. However, the shift to virtual care was also accompanied by initial reports of uneven adoption of telehealth across populations. Led by **Alon Peltz**, a team undertook an 18-month study¹⁸, funded by the Massachusetts Association of Health Plans, to examine telehealth use inequities across Massachusetts since the onset of the COVID-19 pandemic. The study combined interviews of health plan members, clinicians, and community leaders with analysis of 1.8 million health plan members' data. The team found that seniors, children, people with low internet access, and residents of rural communities were least likely to use telehealth. High-quality experiences with telehealth were related to one's ability to receive communications in their preferred language, have the financial means to afford internet and devices, and have the digital literacy to understand technology. The report includes ten recommendations for health plans to advance telehealth equity, separated into three categories: (1) addressing the root causes of the

17 **Yu, H., Klompas, M.,** Kofner, A., Horvitz-Lennon, M., **Zhang, F.,** & McKernan, S. (2022). COVID-19 Vaccination: Concerning Trends in Primary Care Health Professional Shortage Areas. *American Journal of Preventive Medicine*, 63(1), e31–e33.

18 https://www.maohp.com/wp-content/uploads/2022/11/WIFI_Study_2022.pdf



Katherine Yih is a biologist and epidemiologist with domestic and international expertise in infectious disease monitoring and immunization.

digital divide, (2) promoting digital inclusion, removing structural and financial barriers to telehealth access, and (3) supporting higher quality and more inclusive care delivery.

PUBLIC HEALTH

New approaches to vaccine safety monitoring

To ensure the safety of vaccines after they have been approved for use, projects like the CDC-sponsored Vaccine Safety Datalink (VSD), of which the Institute is a member organization, use electronic health data to monitor adverse events and conduct research on questions of vaccine safety in large populations. Typical safety monitoring methods require pre-specifying health outcomes of concern, which may result in overlooking other potential adverse events. Researchers at the Institute have been centrally involved in developing a unique data-mining approach, called TreeScan, that allows a broader assessment of safety. **Katherine Yih** and **Judith Maro** led efforts^{19,20} to apply this novel method to patient data in the VSD to investigate possible

19 **Yih WK,** Daley MF, Duffy J, Fireman B, McClure D, Nelson J, Qian L, Smith N, Vazquez-Benitez G, Weintraub E, Williams JTB, Xu S, & **Maro JC.** (2023). A broad assessment of covid-19 vaccine safety using tree-based data-mining in the vaccine safety datalink. *Vaccine*, 41(3), 826–835.

20 **Yih WK,** Daley MF, Duffy J, Fireman B, McClure D, Nelson J, Qian L, Smith N, Vazquez-Benitez G, Weintraub E, Williams JTB, Xu S, **Maro JC.** Tree-based data mining for safety assessment of first COVID-19 booster doses in the Vaccine Safety Datalink. *Vaccine*, 2022.

adverse effects after receipt of COVID-19 vaccines. The team analyzed diagnoses in inpatient or emergency department settings. Clusters of unusual events, as well as common vaccine reactions such as fever, myalgia, and headache, were detected. The study confirmed previously recognized adverse events, and no previously unknown serious adverse reactions were found.

Earlier, Drs. **Yih** and **Maro** applied the method to study the safety of Shingrix, a highly effective vaccine against shingles (herpes zoster). Shingles is a painful and potentially serious and long-lasting condition that results from the reactivation of the virus that causes chickenpox. It is common in older adults. The study²¹ was funded by Dr.

²¹ **Yih WK**, Kulldorff M, **Dashevsky I**, & **Maro JC**. (2022). A Broad Safety Assessment of the Recombinant Herpes Zoster Vaccine. *American Journal of Epidemiology*, 191(5), 957–964.

Our research is focused in the following areas:

Comparative effectiveness

Which strategies are best to optimize outcomes for individuals and populations?

Delivery systems

How best to improve clinical care processes and outcomes?

Prevention

How to modify the risk of acquiring diseases and/or to prevent their secondary consequences?

Policy

What is the impact of different approaches to health policy, financing, or administering health care insurance?

Public health

How can health care data be used to support public health?

Yih's 2018 Robert H. Ebert Career Development Award and applied the data-mining method to deidentified data from over one million vaccine recipients. There were no unexpected complications from immunization. This finding provides reassurance about the safety of Shingrix and supports its continued widespread use.

Studying the underlying causes of sepsis in COVID-19 era

Sepsis is a serious and often fatal complication of infection. It is usually caused by bacteria, but there is growing recognition that viruses—including COVID-19—are also an important cause. To help inform better strategies for sepsis prevention and treatment, **Michael Klompas** and **Chanu Rhee** conduct ongoing research to better understand its frequency and causes. Along with faculty member **Sanjat Kanjilal**, senior research analyst **Christina Chan**, and research fellow **Claire Shappell**, they measured²² how often sepsis was present among patients hospitalized with COVID-19, and whether sepsis was due to COVID-19 itself, bacterial pathogens, or both. They reviewed the medical records of patients admitted with COVID-19 to four Massachusetts hospitals during the first year of the pandemic to determine whether sepsis was present, the most likely cause of sepsis, and associated patient outcomes. Sepsis occurred in one third of patients hospitalized with COVID-19 and was primarily caused by COVID-19 itself, although bacterial infection contributed to a quarter of cases. Mortality rates for COVID-19 patients with sepsis were very high, especially in patients with both viral and bacterial sepsis. The study highlights the need to improve monitoring, recognition, prevention, and treatment of both viral and bacterial sepsis in patients with COVID-19.

Uncovering inequities in timely COVID-19 treatment

Several outpatient medications are available for the treatment of COVID-19 and are effective in preventing the progression to severe COVID-19. Nirmatrelvir/ritonavir (Paxlovid) is the most commonly prescribed

²² **Shappell CN**, **Klompas M**, **Kanjilal S**, **Chan C**, **Rhee C**. Prevalence, Clinical Characteristics, and Outcomes of Sepsis Caused by Severe Acute Respiratory Syndrome Coronavirus 2 Versus Other Pathogens in Hospitalized Patients With COVID-19. *Crit Care Explor*. 2022 May 13;4(5):e0703.

Joshua Petimar works on policy-relevant questions on calorie labeling, nutrition assistance programs, and the effects of the food environment on diet and health.

and is the preferred outpatient therapeutic for eligible patients; others include molnupiravir (Lagevrio) and remdesivir (Veklury). Prior to 2023, several monoclonal antibody therapies also were available. However, treatment gaps persist among racial and ethnic minority groups. A CDC Morbidity and Mortality Weekly Report²³ senior-authored by **Jason Block** investigated these disparities in detail. The team found that, from April–July 2022, the percentage of COVID-19 patients aged ≥20 years treated with Paxlovid was 36% lower among Black and 30% lower among Hispanic patients than among White and non-Hispanic patients. These disparities existed among all age groups and patients with immunocompromising conditions. To help protect persons at high risk for severe disease and facilitate equitable health outcomes, programs to increase awareness of and access to available outpatient COVID-19 treatments should be expanded.

POLICY

The effect of nutrition policies on consumer behavior

As of 2018, large chain food retailers are required to include calorie labels on prepared (ready-to-eat) foods per a provision in the Affordable Care Act. While studies have examined associations of this policy with customer purchases in restaurant settings, none had examined purchases in supermarkets, where a large and growing proportion of prepared foods are sold. To help close this knowledge gap, a team led by **Joshua Petimar** with **Jason Block**, **Anna Grummon**, **Fang Zhang**, and collaborators estimated changes in customer purchases from before (April 2015–April 2017) to after implementation of calorie labeling (May 2017–December 2017) in a chain of 173 supermarkets in the Northeast. The researchers analyzed sales data from ~375 million transactions (>3



billion items purchased) and found²⁴ that calorie labeling was associated with a 5.1% decrease in calories per transaction from prepared bakery items and an 11% decrease from prepared deli items, without substitution to similar packaged foods that were not subject to the new policy. Given that many prepared foods sold in supermarkets are unhealthy, the authors conclude that calorie labeling has the potential to improve the nutritional quality of customer purchases.

Approvals of new medications: a series of studies on drug regulation, spending, and benefits

In the U.S. and globally, drug regulators often make new medications for serious illnesses available for patient use early, before evidence of clinical benefit such as improved quality or length of life is available. Manufacturers are required to show proof of benefits after approval, at which time, if none exist (or worse, the drugs harm patients), the FDA has the authority to rescind the approval. In addition to potentially causing patient harm, this expedited approval pathway can also waste health care dollars. Led by **Anita Wagner**, a study team of current and former Health Policy and Insurance (HPI) Research fellows has developed a database of cancer drugs approved in the U.S. since 2001. Using this data source, the team has studied evidence underlying

23 Boehmer TK, Koumans EH, Skillen EL, ... **Block JP**. Racial and Ethnic Disparities in Outpatient Treatment of COVID-19 — United States, January–July 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:1359–1365.

24 **Petimar J, Grummon AH, Zhang F, Gortmaker SL, Moran AJ, Polacsek M, Rimm EB, Roberto CA, Rao A, Cleveland LP, Simon D, Franckle RL, Till S, Greene J, Block JP** (2022). Assessment of calories purchased after calorie labeling of prepared foods in a large supermarket chain. *JAMA Internal Medicine* 182(9): 965–973.

drug approvals, use, and spending. Their publications include three manuscripts^{25,26,27} in *JAMA Internal Medicine* on cancer drug use and spending in the U.S. and on FDA communication of evidence. In addition to resulting in a growing portfolio of work on unintended impacts of expedited drug approval pathways, a topic of global importance, this ongoing work documents the power of collaboration across continents made possible by former and current HPI fellows (for more on the fellowship, see page 24).

PREVENTION

■ Preferences for HIV Preexposure prophylaxis products among Black women in the U.S.

Black women's risk of HIV infection is 11 times that of White women. Taking anti-HIV medications before exposure to the virus greatly reduces the risk of becoming infected. These drugs, known as preexposure prophylaxis or PrEP, can be taken by mouth daily or by injection every 8 weeks. Improving the use of preventive medicines against HIV is a major ongoing focus of the Institute. In particular, Black women's preferences for HIV prevention need to be better understood to improve equity in PrEP access and use. **Whitney Irie** and **Julia Marcus** led a study²⁸ to assess the preferences of a nationwide sample of Black women regarding their knowledge of PrEP medication and their interest in using them. They found that two thirds of Black women would be interested in using these drugs if they were available at no cost. Most women would prefer to take pills, but some women would prefer injections, especially those who are concerned about being seen taking

PrEP and those at increased risk of HIV infection. These findings can be used to improve the delivery of PrEP to Black women.

Nature's effect on neurodegenerative disease hospitalizations among older U.S. adults

Natural environments, such as forests, parks, street trees, and rivers, may impact Alzheimer's disease and related dementias and Parkinson's disease incidence through several mechanisms. Contact with these elements can help reduce stress and restore attention, provide settings for physical activity and social interactions, and may reduce exposure to air pollution, extreme heat, and noise. They may also protect against several neurological-related outcomes such as cognitive decline, stroke, and neurodegenerative disease mortality. While prior studies examining associations of green space with Alzheimer's and Parkinson's incidence have reported mixed findings, work²⁹ senior-authored by **Peter James** harnessed a robust Medicare beneficiary dataset and rigorous methods to evaluate the associations of three natural environment measures (greenness, park cover, and blue space cover related to bodies of water) with first Alzheimer's and Parkinson's hospital admissions in a cohort of approximately 61.7 million individuals aged 65 and older. Findings suggest that exposure to some natural environments may reduce the risks of Alzheimer's and Parkinson's hospitalization among older adults, meaning that these exposures may slow disease progression or susceptibility. The team recommends that planning practices to increase natural environments, such as planting trees, developing parks, and incorporating more blue spaces, may decrease risk for the two diseases.

25 **Shahzad M**, Naci H, & **Wagner AK**. (2021). Estimated Medicare Spending on Cancer Drug Indications With a Confirmed Lack of Clinical Benefit After US Food and Drug Administration Accelerated Approval. *JAMA Internal Medicine*, 181(12), 1673–1675.

26 Fu M, Naci H, Booth CM, Gyawali B, **Cosgrove A**, **Toh S**, Xu Z, Guan X, **Ross-Degnan D**, & **Wagner AK**. (2021). Real-world Use of and Spending on New Oral Targeted Cancer Drugs in the US, 2011-2018. *JAMA Internal Medicine*, 181(12), 1596–1604.

27 Naci H, Guan X, Woloshin S, Xu Z, **Wagner AK**. Communication of survival data in FDA-approved labeling of cancer drugs. *JAMA Internal Medicine* 2021 Jul 12;e213505.

28 **Irie WC**, Calabrese SK, Patel RR, Mayer KH, Geng EH, & **Marcus JL**. (2022). Preferences for HIV Preexposure Prophylaxis Products Among Black Women in the U.S. *AIDS and Behavior*, 26(7), 2212–2223.

29 Klompaker JO, Laden F, Browning MHEM, Dominici F, Jimenez MP, Ogletree SS, Rigolon A, Zanobetti A, Hart JE, & **James P**. (2022). Associations of Greenness, Parks, and Blue Space With Neurodegenerative Disease Hospitalizations Among Older US Adults. *JAMA Network Open*, 5(12), e2247664.



Collaborating with Health Plans for Better Population Health

The Point32Health-Institute Collaboration is a partnership between researchers at the Harvard Pilgrim Health Care Institute and Point32Health. Our work has helped to inform and evaluate new and innovative strategies for the health plan to implement to continue offering members high-value, evidence-based care. Past studies have focused on health insurance exchange plans, management of high-cost cancer medications, and coverage issues for genome-based technologies. Thirteen projects are currently underway.

Projects launched in 2022 by Institute Principal Investigators:

- Addressing Determinants of Obesity Pharmaceutical Treatment (ADOPT) | **Davene Wright**
- Assessing the Long-Term Health Effects of COVID-19 | **Mei-Sing Ong**
- Collaborative Care Coordination Program for Alzheimer's Disease and Related Dementias (Co-CARE-AD) | **Xiaojuan Li, Richard Platt**
- Identifying Reasons for Pediatric Influenza Vaccine Acceptance in 2020 Among Prior Non-Vaccinators | **Claire Abraham, Alison Galbraith**
- Utilization of Non-Emergent Care, Addiction Treatment and Behavioral Health Services by Regular ED Users During the COVID-19 Pandemic | **Olesya Baker**
- Vaccine Safety Datalink Infrastructure | **Judith Maro, Katherine Yih**

The Ethics Advisory Group

Since 1996, Institute faculty have led the health plan's Ethics Program, a central component of which is the Ethics Advisory Group. **Anita Wagner** serves as the program's director. Quarterly Ethics Advisory Group deliberations provide a forum for input by internal and external stakeholders on challenging ethical questions health plan leaders face.

TEACHING

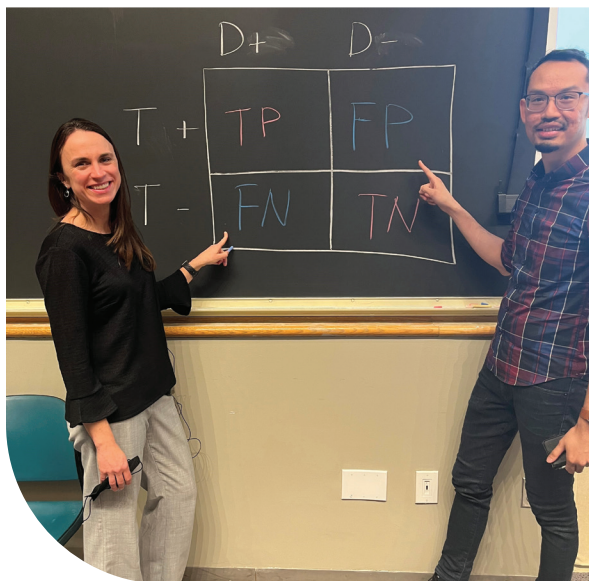
Our mission includes leading educational programs that give physicians and population scientists-in-training the tools they need to become health care leaders of the future. We take education beyond the classroom and into the types of settings where these trainees will eventually practice. Our teaching programs are enriched by our focus on the health of populations and our understanding of the diverse health issues that face our society in the 21st century.

Classroom Teaching

HARVARD MEDICAL SCHOOL

Clinical Epidemiology and Population Health

Institute faculty have led the Clinical Epidemiology and Population Health curriculum at Harvard Medical School (HMS) since 1996. This longitudinal curriculum spans three required courses in the pre-clerkship and post-clerkship phases of the HMS curriculum: Essentials of the Profession I, Transition to the Principal Clinical Experience, and Essentials of the Profession II. These courses are led by **Izzuddin Aris**, **Jason Block**, and **Laura Garabedian**, and combine teaching of core skills of clinical epidemiology (biostatistics, study design, and critical reasoning) as they apply to the care of individuals and populations with an introduction to key public and population health topics. Population health topics include colorectal cancer screening,



*Clinical Epidemiology and Population Health is “Essential” to the Harvard Medical School curriculum — our courses impart core skills to HMS students as they apply to the care of individuals and populations, with the hope that they will not only focus on just **treating** disease but also **preventing** it, based on sound epidemiological evidence.”*

— **Izzuddin Aris**

Assistant Professor; Co-Director, Clinical Epidemiology and Population Health

COVID-19 and HPV vaccines, coronary heart disease, climate change, preexposure prophylaxis for HIV, nutrition policy and obesity treatment, and the opioid epidemic, among other topics. The curriculum provides students with the skills to critically evaluate evidence and use it appropriately in clinical decisions and population health management. In pre-clerkship courses, students are introduced to key clinical epidemiological concepts and then apply these concepts to make evidence-based decisions for clinical cases. In the post-clerkship course, students employ clinical epidemiological concepts to critically appraise population health research studies and explore and improve population health problems. **Nine** faculty, **six** research scientists, and **three** research fellows participated in teaching the courses in 2022.

Laura Garabedian (left) and Izzuddin Aris (right), serve as co-directors of Clinical Epidemiology and Population Health, a component of the Essentials of the Profession course at HMS.

Marie-France Hivert is the director of the Curricular Theme Nutrition and Lifestyle Medicine and co-director of the Advanced Integrated Science Course Metabolism, Nutrition, and Lifestyle Medicine.

Infectious Diseases

Sanjat Kanjilal serves as director of Mechanisms of Microbial Pathogenesis, a core course for second-year medical students in the Harvard-MIT Health Sciences and Technology program. The course introduces students to cutting-edge research ranging from next generation single cell sequencing platforms for antibiotic susceptibility to artificial intelligence models for early identification of patients with sepsis to vaccine development for SARS-CoV-2. In 2021, Dr. Kanjilal updated the course structure, content, content delivery, diversity of lecturers, and sociocultural context. The course structure shifted from podium lectures to interactive flipped-classroom formats, and problem sets focused on solving challenging real-world cases and “Grand Challenges” in infectious diseases. Content that implicitly supported racist and discriminatory practices was replaced with that which recognizes the contributions of under-represented minorities in understanding problems in microbiology and infectious disease. A new diverse group of young physician scientists was recruited as lecturers and case discussants. Students gave the course a perfect evaluation. In 2022, Dr. Kanjilal was awarded the Dr. Irving M. London Teaching Award.

Advanced Integrated Science Course (AISC): Nutrition, Metabolism, and Lifestyle Medicine

Advanced Integrated Science Courses are required for third and fourth year medical students and are meant to augment the curriculum with topics on the frontier of research, clinical advances, and applications. The AISC Nutrition, Metabolism, and Lifestyle Medicine, co-directed by **Marie-France Hivert**, ran in 2022 to high demand, with all 25 seats filled. The course combines the expertise of multiple faculty members across HMS-affiliated institutions to expand students’ knowledge and skills to integrate nutrition, physical activity, and other lifestyle behaviors into their future career. Students attended in-class sessions with case-based collaborative learning, journal clubs, and experiential learning, gaining valuable experience in critically reviewing the current literature, summarizing findings, and presenting to their peers. Students participated in a wide variety of specialty clinical programs, including weight management, diabetes care, hyperlipidemia, parenteral nutrition, neonatal intensive care units,



celiac disease, and others across HMS-affiliated hospitals. **Peter James** served as a guest lecturer in the course.

Curricular Theme: Nutrition and Lifestyle Medicine

Since 2019, **Marie-France Hivert** has served as theme director for the Curricular Theme Nutrition and Lifestyle Medicine. Over the last year, she and a devoted team of students, faculty, and staff reviewed the HMS curriculum and mapped elements related to nutrition, physical activity, and behavior change across all pre-clinical courses, suggesting the introduction of new material and enhancements into specific courses to augment the knowledge and skills of HMS students. Some newly added elements in 2022 include five case-based discussions during the Transition to Principal Clinical Experience (PCE) course as well as a novel formative oral structured exam during the PCE year. All existing elements for the Curricular Theme Nutrition and Lifestyle Medicine are now catalogued and easily accessible to students and faculty in a Canvas page, another major accomplishment over the last year.

COURSE LEADERSHIP AND TEACHING AT THE HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH

Institute faculty also bring their analytical and statistical methods expertise to lead several courses at the Harvard T.H. Chan School of Public Health (HSPH).

Statistical Inference I

Rui Wang leads this advanced statistical course offered by the Department of Biostatistics. Geared toward doctoral students across the university, the course

addresses general principles of data reduction, methods of point and interval parameter estimation and the finite and large sample properties of estimators, and methods of hypothesis testing and optimality properties of tests.

Introduction to Statistical Genetics

Sharon Lutz co-leads this course in the Department of Biostatistics with Martin Aryee. Topics include the basic molecular biology underpinnings of genetics, principles from population genetics, family-based and population-based association testing, genome-wide association studies, expression QTL analysis and epigenome-wide association studies. **Kurt Christensen** served as a guest lecturer.

Built Environment, Nature, and Health

Peter James leads this course in the Department of Environmental Health, in which students learn how to study the influence of built and natural environments on an array of health outcomes, critically assess the evidence behind associations observed in the literature, and explore the policy and decision-making processes that facilitate built and natural environment changes.

Jason Block guest lectured in this class on the relationship of the food environment (access and availability of food stores in neighborhoods) with diet and health.

Analysis of Multivariate and Longitudinal Data

Tom Chen leads this course, offered by the Department of Biostatistics. The course presents classical and modern approaches to the analysis of multivariate observations, repeated measures, and longitudinal data.

Gender and Health

Brittany Charlton leads this course, which is the first of six core courses in the Women, Gender, and Health Concentration sequence. It introduces students to gender as a theoretical concept and a category of analysis in public health—specifically, the ways in which gender differentially structures health for women, men, and people of all genders. This course emphasizes the epidemiological aspects of gender analysis and the interactions among gender, class, race/ethnicity, and sexuality.

Diversity, Equity, and Inclusion (DEI)

The Institute remains committed to addressing the systemic and structural racism and other causes of inequity that are so prevalent in our society. Institute members have maintained engagement in much-needed conversation about the legacy of racial injustice in the United States through a variety of new initiatives and increased participation in standing programs. In 2022, we continued to improve communication, expanding disparities research, deepening our commitment to service, and welcoming experts to the Institute for educational programs:

- The DEI Reading & Discussion Group met quarterly.
- The Institute engaged four speakers: Mary Grimes-Finley and Tara Healey on the topic of *Building Anti-Racist Skills through Mindful Listening*; Juliette Mayers on *Healthy Conversations and Bi-standing Coaching*; and Javier Barrientos on *Point32Health's 2022 Initiatives*.
- Institute investigators remain dedicated to promoting diversity in their research and teaching, with newly funded initiatives including:

- › **Emily Oken's** Diversity Supplement to the Project Viva Mom project, "A Lifecourse Approach to Women's Mental Health: From Fertility to Perimenopause"
- › **Brittany Charlton's** NIH-funded Diversity, Equity, Inclusion and Accessibility (DEIA) mentorship award, "Strengthening Mentorship for Sexual and Gender Minority Health Researchers" (for more information on this mentorship program, see page 22).
- Members of the Institute exhibited community spirit by partaking in numerous volunteer activities as individuals and within groups.



Additional Teaching Activities

Harvard SOGIE Reproductive Health Seminar Series

Brittany Charlton led a year-long seminar series on reproductive health among LGBTQ+ populations. A dozen organizations co-sponsored the series, and hundreds of attendees from across the country joined each month. Speakers discussed various topics, including pregnancy, birth, gender-based violence, trauma, reproductive justice, sex education, pleasure, inclusive language and therefore inclusive science. Discussions focused on nourishing collaborations, tackling existing challenges, and brainstorming new directions.

Harvard Sexual and Gender Minority Health Mentoring Program

In 2022, **Brittany Charlton** founded the Harvard Sexual and Gender Minority Health Mentoring Program. The program includes mentor training curricula for faculty, fellows, and trainees and aims to improve mentorship for those focused on LGBTQ+ populations and from underrepresented groups. The team piloted the faculty curriculum in the spring and Dr. Charlton received one of the inaugural NIH awards for excellence in diversity, equity, and inclusion, allowing them to evaluate, refine, and disseminate the program.

Teaching on a global scale

As part of her Fulbright-Tampere University Scholar Award (see page 26), and made possible by the Fulbright Finland Foundation, **Anita Wagner** and fellow scholars designed and implemented the first-ever course in Finland on global pharmaceutical policy. The

While working as a Fulbright scholar in Finland, Anita Wagner made a new friend when visiting Finnish Lapland, 250km north of the Arctic Circle.

course attracted medical, political economy, and global and public health students. **Dennis Ross-Degnan** guest lectured in the course.

DIDACTIC LEADERSHIP IN CLINICAL SETTINGS

In addition to their research, clinical practice, and classroom teaching, numerous faculty participate in clinical educational activities:

Jason Block supervises Internal Medicine residents in their longitudinal continuity clinics at the Phyllis Jen Center for Primary Care at Brigham and Women's Hospital.

Marie-France Hivert supervises clinical fellows at the Massachusetts General Hospital Diabetes Center.

Sanjat Kanjilal leads didactics for the Brigham and Women's Hospital microbiology fellows, rotating infectious diseases fellows, and pathology residents.

Douglas Krakower serves as Associate Program Director for the Infectious Diseases fellowship at Beth Israel Deaconess Medical Center.



Fellowships and Mentoring

A productive fellowship can be a catalyst into a successful research career. Institute research fellows receive support and regular feedback on their work and strong mentorship to guide their paths toward their desired goals and career trajectories, both at the Institute and beyond. We wish the best of luck to the following individuals who completed their fellowships in 2022:

Saumya Chatrath

Current Position: Health Economist, Mathematica

Kaitlyn Cook

Current Position: Assistant Professor of Statistical & Data Sciences, Smith College

Nidhi Ghildayal

Current Position: Research Associate, Harvard T.H. Chan School of Public Health

John Merriman III

Current Position: Assistant Professor, University of Florida

Natalia Kunst

Current Position: Senior Advisor, Norwegian Directorate of Health

Pi-I Debby Lin

Current Position: Research Scientist, HMS Department of Population Medicine, Harvard Pilgrim Health Care Institute

Caitriona McGovern

Current Position: Gastroenterologist, Tufts Floating Hospital for Children

Nicolas Trad

Current Position: Medical Student, Harvard Medical School

Jenna Wong

Current Position: Instructor, HMS Department of Population Medicine, Harvard Pilgrim Health Care Institute

Sen Xu

Current Position: PhD Candidate, Xi'an Jiaotong University

Yue Ariel Zhou

Current Position: Researcher, Peking University School of Pharmaceutical Sciences

WELCOME TO THE INSTITUTE: INTRODUCING NEW 2022 FELLOWS

HARVARD MEDICAL SCHOOL FELLOWSHIP IN GENERAL MEDICINE AND PRIMARY CARE

The Institute is one of six sites for HMS's Fellowship Program in General Medicine and Primary Care, one of the leading training programs in the nation.

Daniel Nelson | Mentor: Hao Yu

HARVARD-WIDE PEDIATRIC HEALTH SERVICES RESEARCH FELLOWSHIP

The Institute is one of three sites for the Harvard-wide Pediatric Health Services Research Fellowship, which trains pediatric generalists and subspecialists.

Daniel Shapiro | Mentor: Ann Wu

FELLOWSHIP IN HEALTH POLICY AND INSURANCE RESEARCH

Created in 2001, this Fellowship trains pre- and post-doctoral individuals in generating evidence to inform health policy.

Kacie Dragan | Mentors: Alison Galbraith, Laura Garabedian

Dipal Nagda | Mentor: Anita Wagner

THOMAS O. PYLE FELLOWSHIP

The Institute's Thomas O. Pyle Fellowship Fund provides funding for individuals studying critical topics in domestic health policy and health care systems.

Takuya Kawahara | Mentor: Jessica Young

Sarah McKetta | Mentor: Brittany Charlton

Natalie Smith | Mentor: Davene Wright

Tingting Yu | Mentor: Rui Wang

ADDITIONAL FELLOWS:

The Institute also welcomes fellows and visiting students not enrolled in Institute training programs. These fellows train with faculty as part of existing research grants or under outside training programs.

Payal Chakraborty | Mentor: Brittany Charlton

Aimee Huang | Mentor: Brittany Charlton

Sana Majid | Mentor: Marie-France Hivert

Aviva Musicus | Mentor: Jason Block

Amy Nichols | Mentor: Emily Oken

Yi Ying Ong | Mentor: Izzuddin Aris

Theodore Pak | Mentor: Michael Klompas

Colleen Reynolds | Mentor: Brittany Charlton

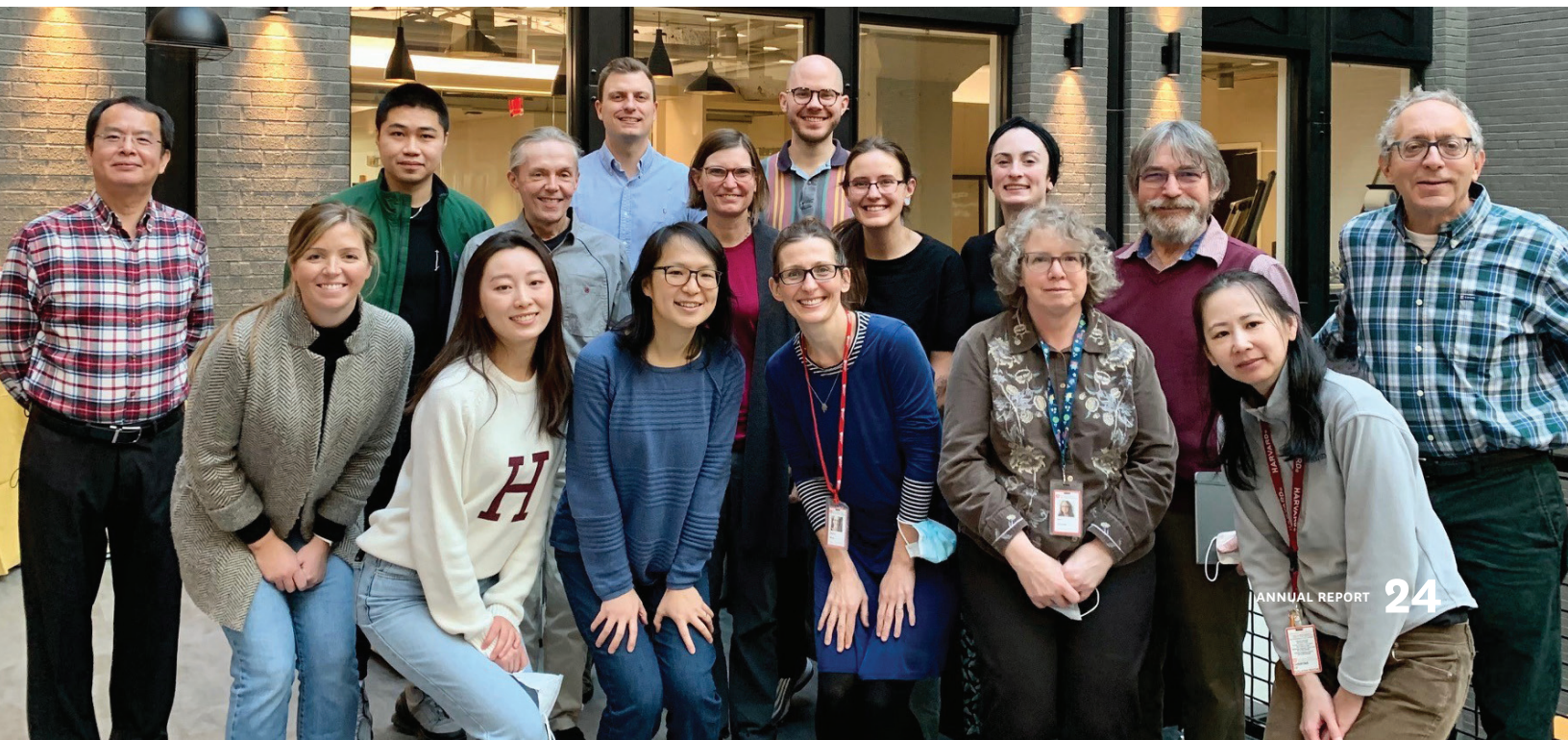
Kodiak Soled | Mentor: Brittany Charlton

Michael Traeger | Mentor: Julia Marcus

Han Yu | Mentor: Jason Block

Mingyu Zhang | Mentors: Marie-France Hivert, Emily Oken

Health Policy and Insurance Research (HPI) fellows and division members gather on the Institute balcony for a farewell celebration honoring three of their fellows.



Honors/Awards

THE SUZANNE AND ROBERT FLETCHER PRIZE IN POPULATION MEDICINE

In 2022, the Institute awarded the fifth annual Suzanne and Robert Fletcher Prize in Population Medicine, named for Professors Emeriti Suzanne and Robert Fletcher, who have been national leaders in advancing the field of clinical epidemiology. An expert panel of Institute faculty reviewed submissions from Harvard Medical School and Harvard School of Dental Medicine students, judging each by the importance of the topic for population health, clarity of expression, and quality of writing.

Kushal Kadakia, Harvard Medical School Student

His winning submission, “Paying for Prevention—The Next Frontier for Value-Based Care,” reviewed the evidence from Medicare’s previous population health experiments and identified challenges and opportunities for deploying new demonstrations focused on prevention and health promotion. The paper³⁰ was later published in *Milbank Quarterly*.

GORDON MOORE AWARD FOR EXCELLENCE IN MENTORING

The Harvard Pilgrim Health Care Institute strives to provide its staff, fellows, faculty, and leadership with strong mentoring to facilitate their development. The annual Gordon Moore Award for Excellence in Mentoring celebrates outstanding Institute members who inspire, support, and catalyze a colleague’s development to

³⁰ Kadakia KT, Song Z. Saving Money or Improving Health? Reconsidering Payment Reform. *Milbank Quarterly Opinion*. October 25, 2022.

become the best they can be in their careers and lives. A nomination for excellence in mentoring appreciates individuals who have had a transformative role in the professional or personal development of one or more mentees.

Jessica Sturtevant, Director of Analytics, TIDE Anita Wagner, Associate Professor

HARVARD MEDICAL SCHOOL EXCELLENCE IN MENTORING AWARDS

The HMS Excellence in Mentoring Awards recognize the value of quality mentoring relationships and the impact they have on professional development and career advancement in basic/clinical medicine, research, teaching, and administration.

Anita Wagner | A. Clifford Barger Excellence in Mentoring Award

Izzuddin Aris | Young Mentor Award

EBERT FELLOWSHIP, HARVARD MEDICAL SCHOOL ELEANOR AND MILES SHORE FACULTY DEVELOPMENT AWARD

Meghan Baker, Assistant Professor

The Ebert fellowship is awarded to junior faculty to support research and career development in population medicine. For her Ebert fellowship project, Dr. Baker aims to (1) estimate the incidence of asymptomatic *C. difficile* carriage and risk of developing clostridium difficile infection (CDI) by culturing vancomycin-resistant enterococci (VRE) surveillance swabs for toxigenic *C.*



difficile and (2) conduct a randomized trial to determine the impact of an infection control, environmental services, and infectious disease pharmacy prevention bundle on hospital-onset CDI among asymptomatic *C. difficile* carriers identified by culturing VRE swabs for *C. difficile*.

THE AAKA PANDE AND SUMIT MAJUMDAR MEMORIAL AWARD

The Division of Health Policy and Insurance Research sponsors the Aaka Pande and Sumit Majumdar Memorial Award. Through this award, the Division recognizes annually the talents of current and former research fellows who are making significant contributions to health policy dialogue through papers, blogs, or op-eds.

Katy B. Kozhimannil, Distinguished McKnight University Professor, Division of Health Policy and Management, University of Minnesota

FULBRIGHT-TAMPERE UNIVERSITY SCHOLAR AWARD

Anita Wagner, Associate Professor

Jointly funded by the Fulbright Finland Foundation and Tampere University, Dr. Wagner's collaboration with colleagues from Tampere University, the Cancer Society of Finland, and the Finnish Institute of Bioethics addresses questions on cancer medicines across health systems.

Robert H. Ebert Career Development Awards

The Institute's Robert H. Ebert Career Development Award, named for the founder of Harvard Community Health Plan and former Dean of Harvard Medical School, supports the work of Institute faculty who demonstrate exceptional promise in the area of ambulatory care, primary care, or preventive medicine.

These awards provide resources to develop leading-edge programs in teaching and research and to pursue scientific and professional activities consistent with the Institute's mission. Congratulations to 2022's awardees:

Peter James | Developing a Center for Nature and Health

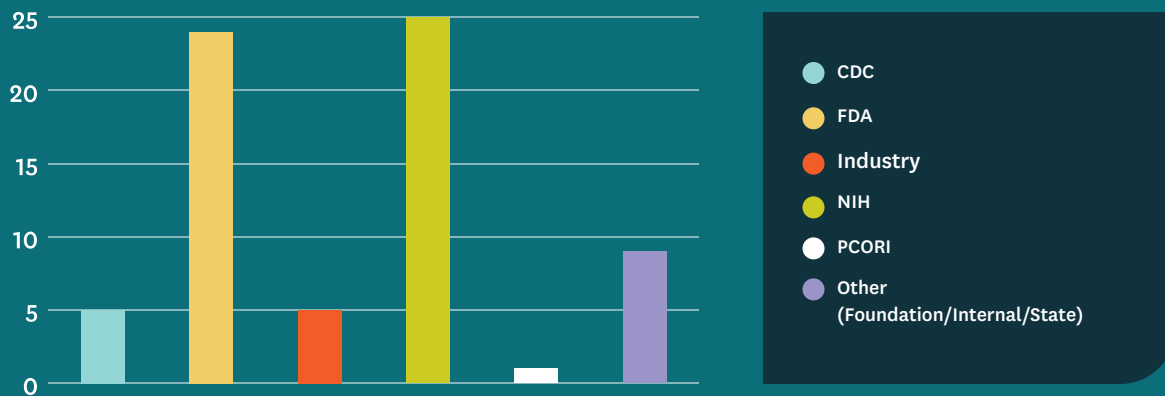
Dr. James will use his Ebert Award to support the development of a Center for Nature and Health housed at the Institute, as well as the establishment of a Repository for Spatial Metrics of Nature for use in epidemiologic research.

Julia Marcus | Developing a Framework for Centering Desired Outcomes In Public Health

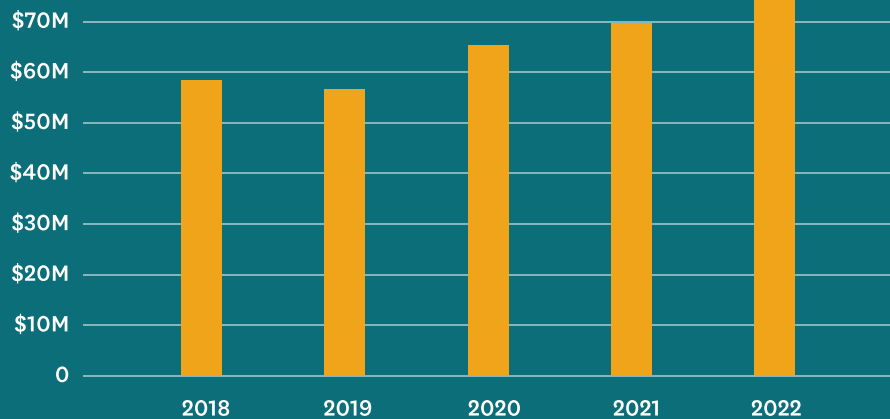
The field of public health has historically focused on avoidance of risk factors and disease. Dr. Marcus's Ebert Award will support research and thought leadership to promote greater consideration of desired health-related experiences, which are fundamental to health and wellbeing and therefore as essential to health research as measures of risk and disease.

2022 BY THE NUMBERS

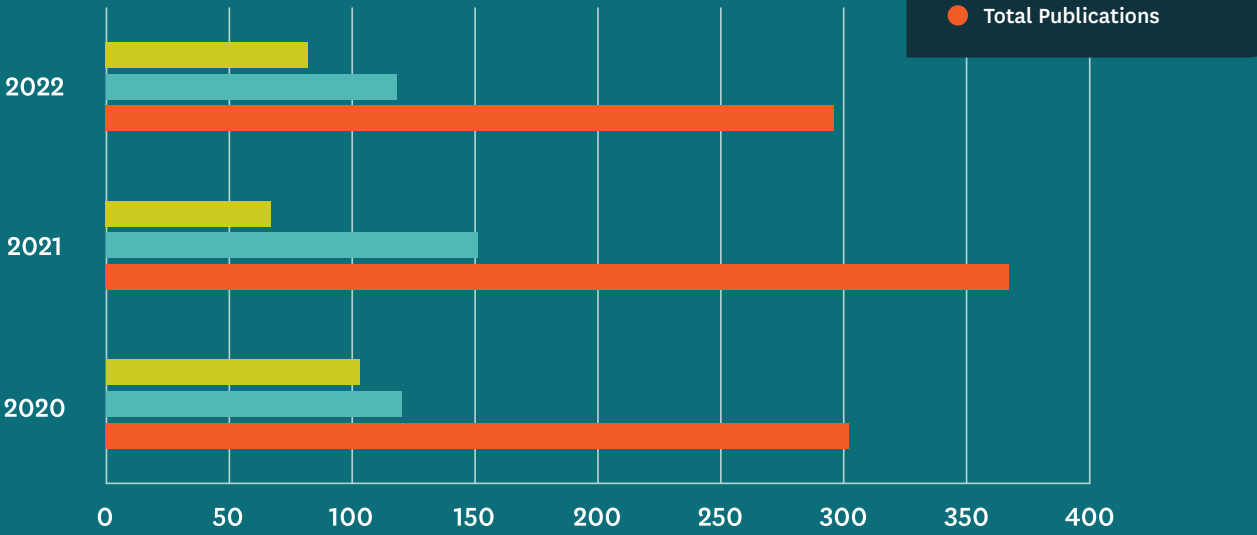
NUMBER OF NEW AWARDS (BY FUNDER)



TOTAL RESEARCH INCOME (IN MILLIONS)



PUBLICATIONS IN PEER-REVIEWED JOURNALS



AWARDS + GRANTS



232

ACTIVE GRANTS/
CONTRACTS



175

NEW PROPOSALS
SUBMITTED



69

NEW AWARDS



295

PUBLICATIONS
82 FIRST AUTHOR
118 SENIOR AUTHOR



\$75.5M

IN GRANT/CONTRACT REVENUE

MISSION

The Institute's mission is to improve health care delivery and population health through research and education, in partnership with health plans, delivery systems, and public health agencies.



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