



Center *for* Health Incentives
& Behavioral Economics



2020-2021

ANNUAL REPORT





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This year was marked, once again, by the COVID-19 pandemic. Despite the physical distance separating many of us, as well as the exhaustion and fear many of us experienced — whether we were working on the front lines caring for COVID-19 patients directly or pivoting to use behaviorally informed insights to improve contact tracing, or examining the effects of the pandemic on individuals' mental or economic well-being — CHIBE-affiliated faculty and staff persevered and rose to the occasion. I commend our team for working hard to make positive things happen while we all struggled with the physical and emotional challenges of this year.

Our Center is proud of how quickly we were able to stand up programs to help screen and monitor patients remotely, keeping our health systems and communities safer. As COVID-19 vaccines were developed, our faculty led the charge in advocating for a just and equitable allocation in the United States and abroad, and we lent our expertise and designed incentive programs like the Philly Vax Sweepstakes to increase vaccine uptake (see page 10 for more details).

Another important development this year was the establishment of a Committee for Antiracism and Social Change (CASC) — a combined effort between CHIBE and the Palliative and Advanced Illness Research (PAIR) Center. Approximately 35 faculty, staff, trainees, and administrators came together to discuss how to increase diversity, equity, and inclusion within our own organizations as well as how to tackle racism and racist policies in our world. These deliberations will inform our policies and approach going forward. In addition, CHIBE members were instrumental in creating a regional health equity initiative, which seeks to combat racism and improve health equity in a myriad of ways in Philadelphia, and which you can read more about on page 16 of this report.

We have a terrific team and unfortunately (for us) Mitesh Patel, MD, MBA, MS, one of the key members of our leadership team and the founding Director of the Penn Medicine Nudge Unit, was offered the opportunity to be the National Lead for Behavioral Insights and the VP for Clinical Transformation at Ascension Health. We wish Mitesh all the best and are grateful for his inspired leadership. David Asch, MD, MBA, executive director of the Penn Medicine Center for Health Care Innovation and I are happy to announce that Rinad Beidas, PhD, will be the new Director of the Nudge Unit, which will continue to be jointly sponsored by CHIBE and the Center for Health Care Innovation.

We have made a number of other important changes to our leadership team to further strengthen our Center and to bring emerging leaders onto the team. Alison Bутtenheim, PhD, MBA, previously an Associate Director of CHIBE, took on a new leadership role as our Scientific Director. In addition, Christina Roberto, PhD, was named an Associate Director, and M. Kit Delgado, MD, MS, was also added to the leadership team as an Associate CHIBE Director. We are delighted that Harsha Thirumurthy, PhD; Jalpa Doshi, PhD; and Amol Navathe, MD, PhD; will continue in their current roles as Associate Directors as well.

Meanwhile, CHIBE teams continue to apply behavioral economic strategies to encourage healthy food choices, reduce cardiovascular disease risk, increase exercise, and other important population health challenges. In all of our work, we seek opportunities to advance the science of behavior change to improve health, particularly for populations and communities most impacted by systemic racism and social injustice.

We thank you for your continued support, interest, and contributions.

Thank you to Hoag Levins, Editor of Digital Publications at the Leonard Davis Institute of Health Economics, as well as photographers Daniel Burke, Katie Burke, Kara Foran, and Eric Sucar, for the photos contained in this report.

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ABOUT OUR CENTER

CHIBE is the leading scientific organization using behavioral economics to improve health and advance health equity worldwide. Drawing on the expertise of faculty from across the University of Pennsylvania and beyond, CHIBE conducts behavioral economics research aimed at reducing the burden of disease from major public health challenges.

Our mission is to advance the science of applied behavioral economics in pursuit of knowledge, interventions, and policies that lead to higher-value health care, equal access to health care, and healthier lives for all.

CHIBE, which was originally founded within Penn's Leonard Davis Institute of Health Economics (LDI), is one of two original NIH-funded Roybal Centers in Behavioral Economics and Health in the United States. Today, we continue to be part of the robust

network of 15 Roybal Centers across the United States, which focus on the development of interventions to support healthy aging. Since our founding, our Center has specialized in research and dissemination strategies that support the translation of behavioral economic theories to improve health behaviors and health care delivery. We work with public and private sector organizations

locally, nationally, and globally that share our passion for improving people's lives. We have successfully conducted many observational studies and randomized trials using principles of behavioral economics to improve health in a wide variety of clinical, employer, and health plan contexts that have resulted in programs benefitting tens of millions of patients.



OUR FOUR PILLARS OF RESEARCH



HEALTHY BEHAVIORS

Our investigators conduct research to understand the behavioral factors that influence food choice, medication adherence, physical activity, and smoking cessation, among other behaviors.



HEALTH CARE DELIVERY

CHIBE explores innovative behavioral economic solutions to improve health outcomes while reducing costs through the transformation of health care delivery.



DIGITAL HEALTH & WEARABLES

Our team applies principles of behavioral economics to connected health through interventions that leverage CHIBE's Way to Health software platform, as well as wearable fitness trackers and apps.



HEALTH POLICY & FINANCING

Our researchers examine the impact of policy initiatives and shifts in health incentives on patient, clinician, and health system outcomes through a mixture of observational studies and experimental work.



A healthier and more equitable world powered by behavioral economics

 **CHIBE AT A GLANCE**

2020 CITATIONS:
1,677

H-INDEX FOR CHIBE-AUTHORED ARTICLES:
200

2020 CHIBE-AUTHORED PUBLICATIONS:
668

2021 CHIBE-AUTHORED PUBLICATIONS TO DATE:
448

13
YEARS SINCE CHIBE WAS FOUNDED

100+
AFFILIATED FACULTY

1,800+
SUBSCRIBERS TO OUR HEALTHY NUDGE NEWSLETTER

5,000
TWITTER FOLLOWERS

 **TOP TWEETS FROM @PENNCHIBE**

We ask [@R_Thaler](#): What is the most common misconception about behavioral economics/ nudges that you find yourself having to dispel over and over again? He responds: "that behavioral economists think that people are dumb. We don't. We think the world is hard." [#BEandHealth20](#)

One way to motivate people to get vaccinated is by creating a waiting list. It becomes "a way to have people feel invested in getting vaccinated and then creates an 'endowment effect' whereby people won't want to lose their place in line" says [@kevin_volpp](#)

"Vaccine allocation strategies should not exacerbate racial divisions yet must consider socio-economic and racial disadvantage." Read more from Harald Schmidt and colleagues in this [@JAMA_current](#) Viewpoint.

A volunteer team of women scientists, many from Philly, launched [@DearPandemic](#) last year to spread real and clear information about COVID-19. They now speak to 1 million people a month. [@abuttenheim](#) [@PennNursing](#)

RESEARCH AND NEWS HIGHLIGHTS



BEHAVIORALLY INFORMED STRATEGIES FOR A NATIONAL COVID-19 VACCINE PROMOTION PROGRAM

JAMA, December 2020

This *JAMA Viewpoint* by Drs. Kevin Volpp, George Loewenstein, and Alison Buttenheim offered several strategies to increase COVID-19 vaccine confidence and acceptance in diverse populations. The authors suggested 1) making the vaccine free and easily accessible, 2) making access to valued settings conditional on getting vaccinated, 3) using public endorsements from trusted leaders to increase uptake, 4) providing priority access to people who sign up to get vaccinated before vaccines are widely available, and 5) transforming individual vaccination decisions into a public act.

The New York Times

WHY PAYING PEOPLE TO BE VACCINATED COULD BACKFIRE

December 2020

In this *New York Times* article, CHIBE's Co-Director of the Roybal Pilot Program Dr. George Loewenstein and Dr. Cynthia Cryder wrote about some of the risks of offering financial incentives for COVID-19 vaccination. "People are likely to infer from payment that the vaccine could be risky. In our research with Kevin Volpp and Alex London, we found that people naturally assume that payments signal risk. In a series of experiments, we described clinical trials that offered different payment amounts for participating in a study that involved an unfamiliar testing procedure. We found that people believed that a study's riskiness was greater when the payment was higher, even though the descriptions of the study procedures were otherwise identical. Paying people to be vaccinated might, similarly, lead them to infer that it is riskier than they would otherwise assume," they wrote.

LIFESTYLE AND MENTAL HEALTH DISRUPTIONS DURING COVID-19

Proceedings of the National Academy of Sciences of the United States of America

March 2021

This study by CHIBE-affiliated faculty members Drs. Osea Giuntella and Silvia Saccardo and colleagues demonstrated dramatic changes in college students' physical activity, sleep, time use, and mental health during the pandemic. One of the authors' findings was that 61% of the participants were at risk for depression, which was a 90% increase over the baseline rate of 32% two months earlier, prior to COVID-19. "Our findings also suggest a puzzle: Disruptions to physical activity and mental health are strongly associated, but restoration of physical activity through a short-term intervention does not help improve mental health," the study authors wrote.



I'M A BLACK DOCTOR WHO DIDN'T TRUST THE COVID VACCINE. HERE'S WHAT CHANGED MY MIND.

January 2021

CHIBE-affiliated faculty member Dr. Eugenia South wrote a *NBC News* piece about her initial hesitation around receiving a COVID-19 vaccine. The emergency medicine physician planned to wait and see how others fared with the vaccine before taking it herself, but she shared what changed her mind and encouraged her to go ahead with vaccination in December 2020. Reading about the experiences of people of color and Black physicians who participated in vaccine trials, learning more about the mRNA technology, and seeing photos of Black scientist Kizzmekia Corbett, who helped design Moderna's vaccine, provided reassurance. "Let's normalize hesitancy to take a new vaccine," Dr. South wrote. "Shaming people who have questions will not encourage uptake. Skepticism is especially salient for Black people, for whom centuries of mistreatment and harm from systems meant to serve and protect have engendered mistrust."

A MEGASTUDY OF TEXT-BASED NUDGES ENCOURAGING PATIENTS TO GET VACCINATED AT AN UPCOMING DOCTOR'S APPOINTMENT AND A MEGASTUDY OF TEXT-MESSAGE NUDGES ENCOURAGING PATIENTS TO GET VACCINATED AT THEIR PHARMACY

Proceedings of the National Academy of Sciences of the United States of America and SSRN

May 2021

What kind of text — from your doctor's office or your pharmacy — might nudge you to get your flu vaccine? This was a question explored in two "megastudies" led by Dr. Katy Milkman that looked at text-based nudges by the Behavior Change for Good Initiative in collaboration with the Penn Medicine Nudge Unit and funded in part by the Penn Roybal Center. One of the studies involved over 47,000 participants and tested 19 different nudges within Penn Medicine and Geisinger health systems. They found that certain texts sent prior to a visit with a primary care provider could increase vaccination rates by up to 11%. The most successful kinds of nudges were those framed as a reminder to get the flu shot — and specifically that it was already reserved for the patient — and those that had a tone patients expected from their health care provider. The other megastudy was with Walmart and involved 22 text-based nudges deployed to over 700,000 Walmart pharmacy patients. This study had strikingly similar results to the study conducted with Penn Medicine and Geisinger patients. The top-performing messages informed patients that they could get a flu shot at Walmart, and the second message (sent 3 days later) reminded them that a flu shot was "waiting for you."

Additional CHIBE authors: Drs. Mitesh Patel, Alison Buttenheim, Gretchen Chapman, Leslie John, Silvia Saccardo, Kevin Volpp, Angela Duckworth, Maurice Schweitzer



HOW TO CONVINCe PEOPLE TO ACCEPT A COVID-19 VACCINE

March 2021

CHIBE-affiliated faculty member Dr. Damon Centola spoke with *Knowable Magazine* about strategies to encourage COVID-19 vaccination. "People need to receive reinforcement (or 'social proof') from multiple adopters to be convinced — and for the new behavior to propagate," he said. Friends, family, neighbors and acquaintances who face similar experiences or problems can be among the strongest vaccine influencers. "For new parents trying to determine the credibility and safety of vaccines, the opinions of other parents are often seen as more relevant than the opinions of expert epidemiologists."

WHAT BEHAVIORAL SCIENCE PROJECT DID YOU WORK ON THIS YEAR?

“Our team wrote a paper on the methods we used to cost behavioral interventions in three randomized clinical trials: the Habit Formation trial, which tested different ways of paying people for taking their statins; the Process vs Outcomes trial, which tested whether it is more effective to pay people to take statins or to achieve LDL goals; and the EMPOWER trial, which tested the efficacy of remote daily monitoring of the weight and diuretic adherence of patients with congestive heart failure.”

— Louise Russell, PhD

“This year we designed a pilot study that uses behavioral nudges and financial incentives to encourage sustained low-sodium diets in patients with liver disease.”

— Vandana Khungar, MD, MSc



“We conducted a randomized trial evaluating how text messaging outreach and behavioral messaging might increase response to COVID vaccine outreach.”

— Shivan Mehta, MD, MBA



— Chén Kenyon, MD, MSHP

“We are conducting a randomized experiment of financial incentives to promote childhood asthma controller medication adherence in children with multiple yearly asthma exacerbations.”

“We conducted a randomized experiment using financial incentives and various health informational technology tools to support adolescent e-cigarette/vaping cessation.”

— Brian Janssen, MD, MSHP

“My team is testing the impact of two implementation strategies – an electronic health record-based ‘nudge’ and practice facilitation – on clinicians’ delivery of an evidence-based safe firearm storage program called S.A.F.E. (Suicide and Accident Prevention through Family Education) Firearm.”

— Rinad Beidas, PhD

“We used an experimental study design to test the effects of financial incentives on vaccine hesitancy. In another study, we tested the effects of financial and non-financial incentives on randomized clinical trial enrollment.”

— Jessica Fishman, PhD



“We randomized hundreds of vending machines across the City of Philadelphia to different nutrition labeling interventions to see which ones are most effective at promoting healthy food choices.”

— Laura Gibson, PhD, and Christina Roberto, PhD

“We conducted a randomized trial of behavioral nudges based on patient-generated health data to improve symptom management in cancer.”

— Ravi Parikh, MD, MPP, FACP



“We conducted a randomized experiment of behavioral nudges to increase exercise among college students.”

— Marissa Sharif, PhD



POLICY ENGAGEMENT IN COVID-19 VACCINE ROLL-OUT

CHIBE faculty engaged with policymakers in a variety of ways this year to help with the COVID-19 vaccine roll-out. CHIBE Scientific Director Dr. Alison Buttenheim provided testimony on vaccine acceptance to the U.S. House of Representatives' Committee on Science, Space, and Technology this February. In her testimony, Dr. Buttenheim provided several science-based recommendations that she hoped Congress would endorse, fund, and promote. Dr. Buttenheim and CHIBE-affiliated faculty member Dr. Daniel Polsky were also appointed to a National Academies of Sciences, Engineering, and Medicine ad-hoc committee on equitable allocation of COVID-19 vaccines. Dr. Buttenheim also participated in the

Philadelphia Department of Public Health COVID-19 Vaccine Advisory Committee and helped convene three Behavioral Science and COVID-19 Vaccine Acceptance conversations that were co-hosted by CHIBE. CHIBE-affiliated faculty member Dr. Harald Schmidt also provided public comments at the U.S. Department of Health and Human Services' COVID Health Equity Task Force this winter. In addition, Drs. Buttenheim, Angela Duckworth, Gretchen Chapman, and Adam Grant (all CHIBE affiliates) contributed to the COVID-19 Vaccination Uptake Behavioral Science Task Force report for the CMS Chief Medical Officer and Director of the Center for Clinical Standards and Quality for distribution to the Department of Health & Human Services.



PHILLY VAX SWEEPSTAKES

CHIBE and the Behavior Change for Good Initiative (BCFG) helped Philadelphia launch the Philly Vax Sweepstakes, an incentive program to help boost COVID-19 vaccination rates with prizes ranging from \$1,000 to \$50,000. Philadelphia's program included some unique features driven by behavioral insights as well as a desire to target the city's most under-vaccinated communities. For example, 20 zip codes with the lowest vaccination rates in the city were prioritized in the sweepstakes, and the sweepstakes also leveraged what behavioral scientists call a "regret lottery," which means Philadelphians were automatically enrolled and told whether they won or whether they would have won (if they had been vaccinated). BCFG Co-Director and CHIBE affiliate Dr. Katy Milkman, CHIBE Director Dr. Kevin Volpp, CHIBE Scientific Director Dr. Alison Buttenheim, Co-Director of BCFG and CHIBE affiliate Dr. Angela Duckworth, and Nobel Laureate and University of Chicago Professor Dr. Richard Thaler designed the approach that Philadelphia took with the sweepstakes.

COVID ALERT PA

CHIBE assisted the Pennsylvania Department of Health (DOH) with COVID Alert PA, a free app designed to help reduce the spread of COVID-19. The app uses Bluetooth to exchange anonymous IDs between phones in close proximity. If a person with the app tests positive for COVID, the app helps alert those who were in close contact with them. This boosts traditional contact tracing efforts, casting a wider net beyond the people that an individual knows they spent time with. It can help notify people who may have been nearby a person with the virus while standing in line at the supermarket, waiting for a bus, or in some other public area. CHIBE's Drs. Erica Dixon, Kevin Volpp, Laura Gibson, Marissa Sharif, and Lizzie Bair, MS, assisted the DOH with user experience and uptake of the app, which enrolled more than 850,000 Pennsylvanians. The Philadelphia Eagles' Brandon Graham also filmed a PSA to promote the app.



A HEALTHIER AND MORE EQUITABLE FOOD SYSTEM



Admiral Dr. Jerome Adams, Surgeon General of the United States, as well as representatives from the New York City Department of Health & Mental Hygiene, Guiding Stars, Just Salad, and Healthy Food America. Dr. Adams discussed some of the key elements of his report, "Community Health and Economic Prosperity." This report highlights the role businesses can play in engaging with and investing in communities. The panelists also discussed food industry accountability, carbon labeling, and the National Salt and Sugar Reduction Initiative, among other topics.

How can the food industry help create a healthy and equitable food system? This was the topic of discussion at a special event hosted by CHIBE, the PEACH Lab, LDI, and the Penn Prevention Research Center this September. The guest speakers at this virtual event, moderated by CHIBE Associate Director Dr. Christina Roberto, were Vice

BEHAVIORAL SCIENCE AND HEALTH SYMPOSIUM AND CHIBE/PAIR ROYBAL RETREAT

This year marked CHIBE's 10th annual Behavioral Science and Health Symposium, held virtually this year for the first time. CHIBE brought together leading academics to discuss cutting-edge research in health-applied behavioral economics and goals for advancing the field forward. This year, CHIBE welcomed Drs. Emily Oster and Tali Sharot as our keynote speakers, and the event concluded with a thought leader interview (co-sponsored by the Behavior Change for Good Initiative) by Dr. Kevin Volpp with Dr. Richard Thaler, which was attended by around 450 people.

Each year, our center also holds a Roybal Retreat for CHIBE faculty, trainees, and staff. In FY21, we held our retreat (or "mini symposium") virtually for the first time and in collaboration with the PAIR Center. Dr. Atheendar Venkataramani served as the keynote speaker with a talk on structural racism, economic opportunity, and health.

 **SIGNATURE**
PROGRAMS



**PISCE@LDI,
ALACRITY, AND
PENN ISC3**

The Penn Implementation Science Center (PISCE@LDI) is led by Founding Director Dr. Rinad Beidas and Director of Acute Care Implementation Research Dr. Meghan Lane-Fall. The mission of PISCE@LDI is to make it easier for clinicians, leaders, and organizations to use best practices to improve the quality of care provided to patients, thus improving health outcomes equitably. PISCE@LDI has grown to include over 300 members from 10 schools and over 50 departments, centers, and institutes.

One area of scholarship in which PISCE@LDI has been particularly successful is in the application of behavioral economics to implementation science, made possible by its partnership with CHIBE. This work includes the Penn ALACRITY, which is funded by the National Institutes of Mental Health. The ALACRITY Center at Penn, led by Drs. Beidas, Alison Buttenheim, and David Mandell, facilitates the rapid development, testing, and refinement of novel approaches that combine behavioral economics and implementation science to tackle important problems in mental health.

In addition, in 2020, the National Cancer Institute funded the Penn Implementation Science Center for Cancer Control (Penn ISC3). Led by MPIs Drs. Beidas, Justin Bekelman, and Robert Schnoll, the Center uses insights from behavioral economics and implementation science to rapidly accelerate the pace at which evidence-based practices for cancer care are deployed and the extent to which they are delivered equitably.



**THE BEHAVIORAL
SCIENCE & ANALYTICS
FOR INJURY REDUCTION
(BESAFIR) LAB**

CHIBE Associate Director Dr. M. Kit Delgado, Assistant Professor of Emergency Medicine and Epidemiology and a practicing trauma center emergency physician, leads the Behavioral Science & Analytics For Injury Reduction (BeSAFIR) Lab, which applies behavioral economics and data science to develop and test innovative interventions for preventing injuries and overdoses and improve acute care. The Lab's current projects aim to respond to the opioid crisis, prevent motor vehicle crashes, and use large existing datasets to understand the epidemiology of injury and improve emergency and trauma care. Recent work has also improved the understanding of the epidemiology of firearm injuries in the United States and how automated, remote monitoring can improve the outcomes of patients diagnosed with COVID-19.



THE FIELDS PROGRAM

Directed by Dr. Scott Halpern, the Fostering Improvement in End-of-Life Decision Science (FIELDS) program is the world's first program dedicated to using principles of behavioral economics to understand and improve upon the end-of-life decisions made by patients, caregivers, and clinicians. It sits jointly within the PAIR Center and CHIBE. The mechanistic insights into end-of-life decision making generated by the FIELDS Program often provide the "basic science" upon which scalable interventions tested by the PAIR Center are built.

PENN MEDICINE NUDGE UNIT

Launched with support from CHIBE and the Penn Medicine Center for Health Care Innovation, the Penn Medicine Nudge Unit is the world's first behavioral design team embedded within the operations of a health system. The team's mission is to leverage insights from behavioral economics and psychology to design and test approaches to steer medical decision-making and daily health behaviors toward higher value and improved patient outcomes. Since launching in 2016, the team has worked on more than 100 projects including nudging clinicians and patients, predicting decision-making and health behaviors, and behavioral phenotyping. Many of these projects have been scaled either throughout Penn Medicine or implemented in other health systems. In 2018, the team launched the annual Nudges in Health Care Symposium, which has brought more than 200 health systems from around the world to the University of Pennsylvania either virtually or on campus to share insights and advance the field since its first symposium. The Nudge Unit's work has been published in leading medical journals including *NEJM*, *JAMA*, and the *Annals of Internal Medicine*. CHIBE bittersweetly announces that Nudge Unit Director Dr. Mitesh Patel has accepted a new position as the National Behavioral Insights Lead and Vice President for Clinical Transformation for Ascension Health. Fortunately, the Nudge Unit has identified a terrific successor in Dr. Rinad Beidas, who will bring her expertise in implementation science to jump start version 2.0 of the Nudge Unit.



SIGNATURE PROGRAMS

WAY TO HEALTH



Way to Health is an integrated, cloud-based platform that blends behavioral science with scalable digital technology to conduct randomized controlled trials of healthy behavior interventions and strategic telehealth programs. Operated as a partnership between CHIBE and the Penn Medicine Center for Health Care Innovation, the platform provides both remote monitoring and engagement solutions as well as tools for developing and deploying new interventions. The platform has supported over 200 projects that focus on a wide range of areas including monitoring blood pressure, adherence, weight loss, physical activity, and more.

During FY21, the Way to Health team implemented over 14 projects to support a variety of COVID response efforts. This includes early work in the pandemic focused on remote monitoring of patients with or suspected to have COVID. This program, called COVID Watch, monitored over 18,000 patients to date.

As the health system needs shifted over time, the team supported programs such as testing clinics, community vaccine clinics (which vaccinated over 7,500 individuals in underserved communities over 3 months), and efforts to get patients vaccine appointments. The team also supported the Behavior Change for Good and Penn Medicine Nudge Unit “megastudy” across Penn and Geisinger, which tested different interventions for flu vaccine uptake. The total number of individuals whose lives have been touched by Way to Health is well over 1 million now – a dramatic increase from 150,000 just over a year ago.

INDLELA

CHIBE Associate Director Dr. Harsha Thirumurthy and CHIBE Scientific Director Dr. Alison Buttenheim continue to lead a first-of-its kind HIV nudge unit in South Africa called Indlela (which means “the way” or “the path” in Zulu), funded by the Bill & Melinda Gates Foundation. Working closely with researchers at Wits University in South Africa, Indlela has formed partnerships with implementing organizations that are engaged in HIV service delivery in the public sector. Indlela has been building capacity of researchers and implementers in South Africa to apply behavioral science principles in ongoing efforts to increase the utilization of HIV services and end the world’s largest HIV epidemic. This year, Indlela hosted webinars focused on the application of behavioral economics to challenges in delivering HIV care and designed and implemented a virtual workshop series in behavioral economics that engaged many researchers and implementers. The team is now supporting a number of Behavioural Insights Tests, which are rapid evaluations of nudges and other behavioral interventions to improve HIV prevention and treatment outcomes.



PAYMENT INSIGHTS TEAM

Led by CHIBE Associate Director Dr. Amol Navathe, the Payment Insights Team is an interdisciplinary team of experts based in the Perelman School of Medicine whose mission is to utilize insights from economics and behavioral science to analyze existing policy effects and design, test, and evaluate financial and non-financial interventions that can improve health care in pragmatic, real-world settings. The Payment Insights Team is committed to doing so in collaboration with health insurer, health system, physician practice, and policymaker partners in order to achieve organizational and societal goals of greater health care value and equity.

Current projects within the Payment Insight Team’s portfolio focus on bundled payments, large-scale redesign of physician and hospital payment models, optimal use of nudges in health care, and design of predictive models to drive behavior change. The Payment Insight Team’s work has been featured in *JAMA*, *Science*, *Health Affairs*, *Journal of Hospital Medicine*, *Annals of Internal Medicine*, *The New York Times*, as well as in many other high-profile and impactful, scientific journals and media outlets. In the last year, the Payment Insight Team also launched a website to disseminate research findings and updates and to contribute to the advancement of the fields supported by its areas of research.

PSYCHOLOGY OF EATING AND CONSUMER HEALTH (PEACH)



The mission of the Psychology of Eating and Consumer Health (PEACH) Lab, directed by CHIBE Associate Director Dr. Christina Roberto, is to identify and evaluate innovative policies and interventions to promote healthy eating habits and prevent nutrition-related chronic diseases. The Lab focuses on studying relationships between the

social and commercial determinants of health and evaluating policies that will lead to structural changes to support healthy eating habits, particularly among low-income and racial and ethnic minority groups most impacted by diet-related diseases.

This past year, the Lab continued to contribute to the scientific evidence base supporting the use of sugary drink taxes to discourage consumption of unhealthy beverages. The Lab published the first paper demonstrating that taxes on sugary drinks do not lead people to substitute with other foods like sweet snacks or candy. Dr. Roberto also co-authored a commentary highlighting the threat of state-level preemption policies, which prevent local jurisdictions from passing new laws, including sugary drink taxes. The Lab is continuing its sweetened beverage tax work with funding from NIH to examine whether the tax is associated with changes in weight status and dental cavities.

The PEACH Lab also started a new partnership with the restaurant chain Just Salad and is working with them to test the design of different types of carbon labels that highlight the environmental impact of our food choices.

Regional Health Equity Initiative Seeks to Dismantle Racism, Advance Health

Members of CHIBE are co-leading an initiative with a bold ambition: to identify structural and institutional causes of health inequities and racism, transform those practices, and significantly improve health equity in the City of Philadelphia.

This regional health equity initiative is led by Penn Medicine and Independence Blue Cross (Independence) and brings together many other organizations including Children’s Hospital of Philadelphia, Temple, Drexel, Jefferson/Einstein, Philadelphia

College of Osteopathic Medicine, Keystone First, Trinity, and the Philadelphia Department of Public Health, who are committed to combatting health inequity in the city.

Co-leading this initiative are: Director of the Penn Medicine Center for Digital Health (CDH) and CHIBE-affiliated faculty member Raina Merchant, MD, MSHP; Marcy Rost, MS, Executive Vice President and Chief Strategy and Communications Officer at Independence; CHIBE Director Kevin Volpp, MD, PhD; and Richard Snyder, MD, Executive Vice President of Facilitated Health Networks and Chief Medical Officer at Independence, with input from faculty from collaborating Penn groups including the Leonard Davis Institute of Health Economics, the Center for Health Care Innovation, the Opportunity for Health Lab, Penn Urban Health Lab, and the Penn Center for Public Health Initiatives.

“This initiative will work collaboratively with health systems, health organizations, and community partners across the city to move the needle

and address health inequities in an evidence-based rigorous manner that can have sustained change,” Dr. Merchant said.

The initiative’s goal is to improve health equity in Philadelphia in a broad range of areas – not just within the city’s health systems, but also through social determinants of health and our community’s experiences outside of the health care system, such as housing, jobs, and access to affordable and healthy food, green spaces, and more.

Top priority areas of focus are:

- MATERNAL AND INFANT MORTALITY AND MORBIDITY
- CARDIOVASCULAR HEALTH
- BEHAVIORAL HEALTH
- COLORECTAL CANCER
- NEIGHBORHOOD CONDITIONS
- SOCIOECONOMIC DISADVANTAGE

The team will develop a series of interventions and pilot studies to explore how to make meaningful impact in these spaces and then use those insights to develop a playbook that could have a larger, sustainable impact even beyond Philadelphia. The initiative’s website will also host a health equity dashboard to show critical targets for eliminating health inequities in Philadelphia and provide real-time updates on the work being done to address these issues.

In Pennsylvania, Philadelphia County ranks last—67th out of 67 counties—in terms of health, according to the Robert Wood Johnson Foundation (RWJF). The RWJF annual County Health Ranking looks at factors such as length of life and quality of life, as well as health behaviors like smoking, obesity, physical inactivity, and more. Some of the counties surrounding Philadelphia such as Chester, Montgomery, and Bucks rank in the top healthiest counties (Chester ranks 3rd, Montgomery 4th, and Bucks 5th) in terms of health



IN PENNSYLVANIA, PHILADELPHIA COUNTY RANKS LAST – **67** OUT OF **67** COUNTIES—IN TERMS OF HEALTH

outcomes. Just a few miles separate the state’s healthiest and least healthy communities; this initiative seeks to identify the factors contributing to those disparities and improve the health of the residents within Philadelphia.

“It is incumbent upon us to do what we can to improve health by focusing on populations that have been subject to systemic racism,” Dr. Volpp said. “This initiative provides a mechanism to leverage our behavioral science expertise to have more impact. The collaboration between CHIBE and CDH allows us to bring innovation principles and behavioral science to address significant challenges where new approaches are needed to achieve progress.”

The team will conduct both quantitative and qualitative research, leverage diverse data sources, and will also involve community members to better understand what is and isn’t working in our area. The team will also partner with community organizations on the ground who are already doing work in these areas.

One focus of the initiative is looking inward to see what changes can be made within our own institutions.

“We’re not saying we have the solution, and we’re giving it to the rest of the city,” Project Director and CHIBE affiliate Erica Dixon, PhD, said. “We’re looking within our own health care system to see what we can change to better serve the community and eliminate racism.”

Dr. Dixon sees this initiative as a way to streamline anti-racism efforts taking place in the health care, community, and government space.

It offers the “opportunity to bring all of these various parties and voices together to try to work on solutions in ways that build off each other’s solutions rather than happen separately,” she said.

“It is incumbent upon us to do what we can to improve health by focusing on populations that have been subject to systemic racism,”

— Kevin Volpp, MD, PhD

RACISM IS A PANDEMIC

 **AWARDS AND
RECOGNITION**



NAMED IN LIST OF "10 BEHAVIORAL SCIENTISTS YOU SHOULD KNOW"

Forbes
**Alison Buttenheim, PhD, MBA, and
Katy Milkman, PhD**



AUTHORED TWO OF THE TOP 20 MOST-READ ARTICLES OF 2020

Health Affairs
**Atheendar Venkataramani, PhD, MD, MPhil,
Judith Long, MD, and David Asch, MD, MBA**

Dr. Venkataramani was an author on "Mortality Rates From COVID-19 Are Lower In Unionized Nursing Homes." Drs. Long and Asch were authors on "Evidence-Based Community Health Worker Program Addresses Unmet Social Needs And Generates Positive Return On Investment."



NAMED IN LIST OF "76 MOST INFLUENTIAL PHILADELPHIANS"

Philadelphia Magazine
**Angela Duckworth, PhD, MA, MSc, and
Kevin Mahoney, MBA**



NAMED TO BEHAVIORAL AND SOCIAL SCIENCES RESEARCH INTEGRATION WORKING GROUP

National Institutes of Health
Karen Glanz, PhD, MPH



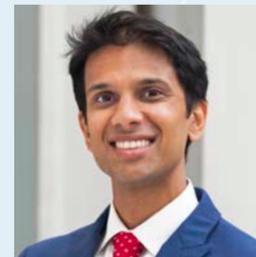
ELECTED HASTINGS CENTER FELLOW

The Hastings Center
Scott Halpern, MD, PhD



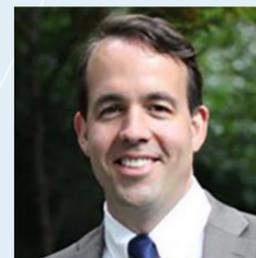
NAMED IN LIST OF 1,000 INSPIRING BLACK SCIENTISTS IN AMERICA

Cell Mentor
Raina Merchant, MD, MSHP, FAHA



2020 DAVID YURMAN-PCF VALOR YOUNG INVESTIGATOR AWARD

Prostate Cancer Foundation
Ravi Parikh, MD, MPP



SAMUEL MARTIN HEALTH EVALUATION SCIENCES RESEARCH AWARD

Penn Medicine
Peter P. Reese, MD, MSCE



ELIZABETH KIRK ROSE, M'26, INT'30 WOMEN IN MEDICINE AWARD

Penn Medicine
Carmen Guerra, MD, MSCE



CHRISTIAN R. AND MARY F. LINDBACK AWARD FOR DISTINGUISHED TEACHING

University of Pennsylvania
Judy Shea, PhD



2021 MILBANK QUARTERLY EARLY CAREER AWARD IN POPULATION HEALTH

Interdisciplinary Association for Population Health Science
Atheendar Venkataramani, MD, PhD



APPOINTED TO NASEM COMMITTEE ON THE QUALITY OF CARE IN NURSING HOMES

National Academies of Sciences, Engineering, and Medicine
Rachel Werner, MD, PhD

CENTER
LEADERSHIP



Kevin Volpp, MD, PhD
Director



Alison Buttenheim, PhD, MBA
Scientific Director



Mohan Balachandran, MA, MS
Chief Operating Officer,
Way to Health



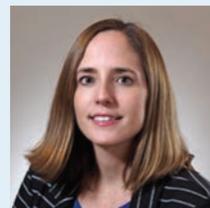
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Associate Director



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Communications Manager



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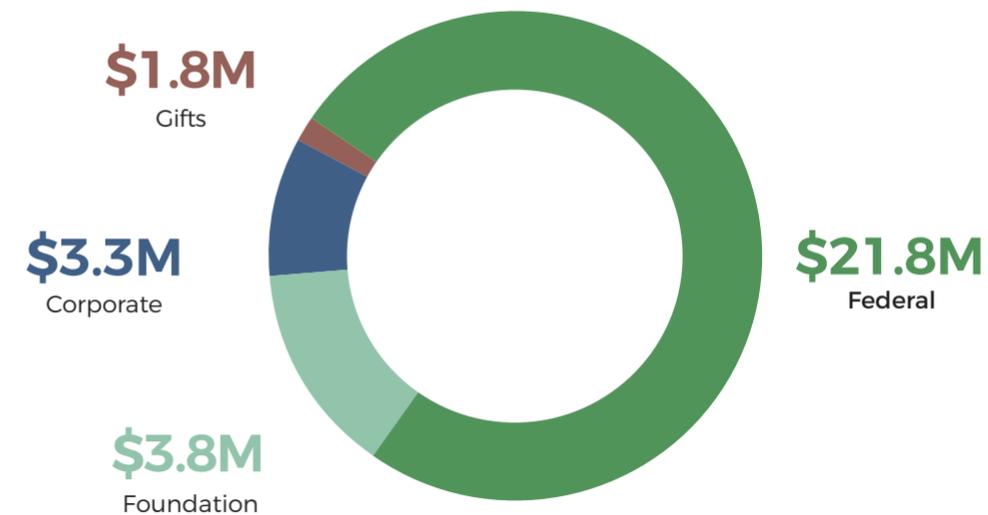


Jingsan Zhu, MS, MBA
Associate Director, Data Analytics

FUNDING
PORTFOLIO

CHIBE receives project-specific funding from foundation, corporate, and federal sponsors. Diversification of our portfolio has been a strategic priority over the past several years, and we have been successful in securing funding from several commercial entities and foundations. In addition, CHIBE receives support from the University of Pennsylvania Health System and the Perelman School of Medicine that has enabled us to make strategic investments, strengthen our infrastructure, and support junior faculty and trainees. We are also grateful to the Otto Haas Charitable Trust, whose gifts allow us to continue strengthening the infrastructure of Way to Health, making it more accessible to junior faculty and trainees by increasing the ease of use and reducing the cost. Generous support from the Otto Haas Charitable Trust has also allowed us to continue to contribute to CHIBE's permanent endowment fund. This year also marked a gift from Independence Blue Cross to support the regional health equity initiative. In addition, we received a generous gift from an anonymous donor for a Director's innovation fund for the support of high priority, quick-turnaround initiatives.

\$157M
TOTAL AWARD FOR
FY21 ACTIVE PROJECTS



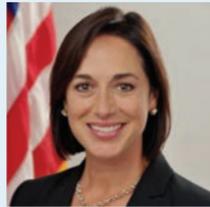
THE DISTRIBUTION FOR
FY21 GRANT ACTIVITY
IS AS FOLLOWS



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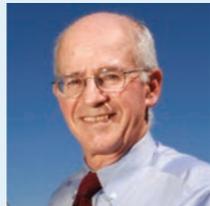
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CHIBE would like to remember our beloved and late friend and colleague Sandra Vanderslice. Sandy was an integral member of our community, who never hesitated to help others. While Sandy was a superb employee for us since 2017, she was much more than that to us. She filled a special role within our center — she was someone who was always available to provide sage advice or a friendly smile. She provided levity when needed, comfort when it was sought, and a sense of camaraderie to pull us together as a team.

We miss her dearly.



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