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YEAR IN REVIEW

PISCIE@LDI

# *About us*

PISCE@LDI is the hub for implementation science research, training, and capacity building at the University of Pennsylvania

# *Our mission*

To advance the science of implementation; train the next generation of implementation researchers; and to transform health and behavioral health services domestically and globally.

# Letter from Rinad Beidas & Meghan Lane-Fall



Dear PISCE@LDI community,

2021 was a year of continued hardships and emerging bright spots. Both of us are incredibly grateful for this community, our mission-driven work to move the needle in health and healthcare, and the generous support of our institution. Now more than ever, there is a clarion call for implementation science, as featured in a recent Science editorial by Drs. Enola Proctor and Elvin Geng, "COVID-19 has shown the world that "knowing what to do" does not ensure "doing what we know." It demonstrates that intervention discovery is the start, not the end, of the scientific journey. There is no better time for science to establish a new lane, one devoted to ensuring that our nation's health discoveries are used to improve population health. The headwinds demand nothing less."

We are a community of over 400 members who come from 10 schools and more than 50 different departments and institutes at Penn and CHOP. We also include external members in the national implementation science community. Our research portfolio is robust – in FY 2021, Penn has 95 active NIH grants with over 22.4 million dollars in direct costs, with a number of center grants dedicated to implementation science. PISCE@LDI has expanded our leadership team to include three Associate Directors, Drs. Courtney Wolk, Kate Rendle, and Chris Bonafide, and also brought on a PISCE@LDI fellow, Dr. Amy Van Pelt. Our educational mission continues to flourish. In partnership with the MsHP, we have trained almost 400 people in implementation science since 2012, many of whom are a part of our community now. We have many exciting activities in store for 2022 to continue to build our community.

Be safe, well, and keep doing your exceptional work.



*Rinad Beidas, PhD*



*Meghan Lane-Fall, MD,  
MSHP, FCCM*



# PISCE@LDI *Team*



## **Rinad Beidas, PhD**

Founding Director, PISCE@LDI  
Professor, Psychiatry, Medical Ethics and Health Policy, and Medicine, Perelman School of Medicine



## **Meghan Lane-Fall, MD, MSHP, FCCM**

Director of Acute Care Implementation Research, PISCE@LDI  
Associate Professor, Biostatistics, Epidemiology, and Informatics, Perelman School of Medicine  
Founding Co-director, Center for Perioperative Outcomes, Research, and Transformation



## **Christopher Bonafide, MD, MSCE**

Associate Director, PISCE@LDI  
Associate Professor, Pediatrics, Perelman School of Medicine



## **Courtney Benjamin Wolk, PhD**

Associate Director, PISCE@LDI  
Assistant Professor, Psychiatry, Perelman School of Medicine



## **Katharine Rendle, PhD, MSW, MPH**

Associate Director, PISCE@LDI  
Assistant Professor, Family Medicine and Community Health, Hospital at the University of Pennsylvania  
Assistant Professor, Biostatistics, Epidemiology, and Informatics, Perelman School of Medicine



## **Amelia Van Pelt, PhD, MPH**

Postdoctoral Fellow, PISCE@LDI



## **Isabelle Kaminer, MS**

Clinical Research Coordinator, PISCE@LDI



## **Daniel Blumenthal**

Clinical Research Coordinator, PISCE@LDI



# Internal Advisory Board



## **ALISON BUTTENHEIM, PHD, MBA**

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Patricia Bleznak Silverstein & the Howard A. Silverstein Term Endowed  
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Associate Professor, Department of Family & Community Health, School  
of Nursing  
Associate Professor, Division of Health Policy, Perelman School of  
Medicine; Director of Engagement, Leonard Davis Institute of Health  
Economics



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Pennsylvania Health System  
Co-Director, National Clinician Scholars Program ,  
University of Pennsylvania  
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Care Management, Wharton School



## **PATRICIA SULLIVAN, PHD**

Chief Quality Officer, University of Pennsylvania  
Health System



## **DAVID MANDELL, SCD**

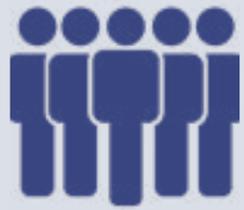
Director, Penn Center for Mental Health; Kenneth E.  
Appel Professor, Department of Psychiatry, Perelman  
School of Medicine  
Vice Chair for Faculty Development, Department of  
Psychiatry, Perelman School of Medicine



## **RACHEL M. WERNER, MD, PHD**

Executive Director, Leonard Davis Institute of Health  
Economics  
Robert D. Eilers Professor, Department of Health Care  
Management, Wharton School  
Professor, Department of Medicine, Perelman School of  
Medicine

# MEMBERSHIP



**430**  
total members



**315**  
members from  
Penn/CHOP



# TRAINING

Courses and student enrollment:

HPR 611- 21 Students    HPR 612 - 6 Students

Yearly Implementation Science Institute:

In Summer 2021, we trained **86** external and internal individuals from around the country at the MsHP Implementation Science Institute (ISI)— a **36%** increase from last year.

Since 2012, over **400** people have been trained through PISCE@LDI's educational offerings.



# EVENTS & SPEAKERS

We convened **3** Works in Progress meetings and **5** speaker events with an average of **59** attendees.



Speaker events were hosted by PISCE@LDI and occasionally with other working groups.

At D&I 2021, **7** PISCE@LDI Members gave presentations and presented **17** posters.



Co-sponsors:  
Center for AIDS Research  
HIV Grand Rounds  
Penn Center for Mental Health  
Penn ISC3

# GRANTS



In 2021, the PISCE@LDI newsletter featured **65** publications by PISCE members.

# TIMELINE OF EVENTS

## 1/14 Ana Baumann

Ana Baumann, PhD gave a presentation on infusing equity approaches into implementation science. She touched on the importance of focusing on reach and engagement, building implementation strategies to ensure best practices can be enacted, and the science of adaptation.

## 2/26 Anne Sales

PISCE@LDI co-sponsored a talk by Anne Sales, PhD, RN. Her talk focused on implementation science and economics.

## 3/15 Works in Progress Meeting

Julie Szymczak, PhD, and Elle Saine, MD, PhD, MA, delivered a presentation on their manuscript: Incorporating Stigma into Implementation Science: Linking Societal Influence to the Clinical Encounter to Understand Inequities in Healthcare Delivery. In addition, Liza Behrens, PhD, RN, presented on her AHRQ K01 specific aims.

## June 7th-10th Implementation Science Institute 2021

## 11/30 Lola Fayanju

In a talk co-sponsored by PISCE@LDI and Penn ISC3, Lola Fayanju, MD, MPHS presented on health equity and implementation science.

January

February

March

April

May

June

July

August

September

October

November

December

## PISCE@LDI SUMMIT

In January 2021, ten mid-career implementation science researchers came together for a PISCE@LDI-sponsored “pre-mortem” - a group brainstorming exercise aimed at imagining a scenario and trying to explain why it might come to be. In this case, the researchers tried to generate explanations for why implementation science might not move the needle, and why funding from NIH might be deprioritized as a result. They came up with six potential threats to implementation science, including insufficient impact, lack of alignment with stakeholders, and not closing the evidence-to-practice gap. The full results of this meeting will be shared in a forthcoming paper.

## 4/26 Geoff Curran

Along with the Penn Center for Mental Health, PISCE@LDI hosted a talk by Geoff Curran, PhD. He discussed hybrid designs and research methods.

## 4/22 Sarita Golub

Sarita Golub, PhD, MPH led a seminar on using implementation science to reduce stigma and promote equitable implementation. This talk was co-sponsored by PISCE@LDI, the Center for AIDS Research, and HIV Grand Rounds.

## 9/29 Works in Progress Meeting

Amanda Bettencourt, PhD, APRN, presented her health system-partnered research project that aims to improve the sustainability of their quality improvement and evidence-based practice projects by training a cohort of implementation science specialist nurses to work on project teams. Yuvaram Reddy, MBBS, MPH, discussed the methodology and preliminary findings of the mixed-methods IM-HOME Study (Identifying major home dialysis barriers).

## 11/3 Works in Progress Meeting

Yehoda Martei, MD, MSCE presented both quantitative and qualitative results from her research on optimizing cancer therapy delivery for HIV+ breast cancer patients in Botswana. Sarah Schrauben MD, MSCE presented her work on patient-centered behavioral interventions for improving Chronic Kidney Disease management.

# Featured Projects

## Pediatrics



### Eliminating Monitor Overuse (EMO) Hybrid Effectiveness-Deimplementation Trial

Chris Bonafide, MD, MSCE and Rinad Beidas, PhD were awarded a five-year grant from NHLBI for “Eliminating Monitor Overuse (EMO) Hybrid Effectiveness-Deimplementation Trial”. The goal of this project is to conduct a hybrid type III effectiveness-deimplementation trial in 32 pediatric hospitals to test deimplementation strategies on sustainability of guideline-concordant SpO2 monitoring deimplementation in young children with bronchiolitis. The total award amount (including indirect costs) is approximately \$5.3 million dollars. You can learn more about this grant [here](#).

### Leveraging implementation and behavioral science to reduce harmful overuse of diagnostic testing in critically ill children

Under a mentorship team that included Judy Shea, PhD, Chris Bonafide, MD, MSCE, and Rinad Beidas, PhD, Charlotte Woods-Hill, MD was awarded this K23 from NHBLI. Using cognitive bias and the CFIR framework, she will investigate determinants of overuse of testing for bacterial infections in the pediatric intensive care unit, and then develop and test strategies for reducing overuse in a pilot hybrid trial. The ultimate goal is to reduce unintended harm to fragile pediatric ICU patients from unnecessary tests and treatments.

### Promoting Equity in Firearm Safety and Suicide Prevention to Reduce Suicide in Black Youth



Katelin Hoskins, PhD, MBE, CRNP was awarded the American Foundation for Suicide Prevention’s (AFSP) 2021 Postdoctoral Fellowship for her research on health equity and suicide prevention. The study leverages a large implementation trial in Michigan and Colorado to examine if implementation of an evidence-based safe firearm storage program as a universal suicide prevention strategy in pediatric primary care differs across racial groups, as well as factors that may moderate potential disparities. This study will also explore Black parents’ experiences with program receipt and firearm storage decision-making processes.

## Cancer

### Penn Implementation Science Center in Cancer Control (ISC3) Health Equity Supplement



Krisda Chaiyachati, MD, MPH, MSHP, Katherine Rendle, PhD, MSW, MPH, and Rachel Shelton, ScD, MPH were awarded an NCI supplement grant to investigate how social determinants of health (SDOH), social needs, and social risks impact the implementation of evidence-based cancer care and health equity. The supplement will study both the Outer Context (i.e., broader sociopolitical context) and the Inner Context (i.e., organizations in which the health care is delivered) in order to develop and refine implementation strategies that better address patients’ needs. To achieve this goal, the Penn ISC3 team will 1) partner with all ISC3 Centers to complete an environmental scan of the Outer Context and 2) collaborate with Wake Forest’s iDAPT team to measure Inner Context elements related to social risk and needs assessment. This work will position the research team to launch multi-site pilot implementation studies that improve the measurement and mitigation of SDOH, social risk, and social needs to improve cancer care outcomes and health equity.

## Increasing Equitable Adherence to Annual Lung Cancer Screening and Diagnostic Follow-up

Katharine Rendle, PhD, MSW, MPH and Anil Vachani, MD, MS have been awarded a NCCN grant to conduct a pragmatic intervention trial testing the effectiveness of patient and clinician nudge strategies on rates of annual lung cancer screening (LCS) adherence and diagnostic follow-up. The goal of this work is to increase early detection of disease and decrease persistent disparities in lung cancer care and survival. Utilizing qualitative and quantitative techniques, this study evaluates multilevel (i.e., patient, clinician, clinic, organizational) factors contributing to the effects of these interventions. For more information, [please click here](#).



## Global

### Fidelity and adaptation of breast cancer resource-stratified treatment guidelines in Botswana

Yehoda Martei, MD, MSCE received a K award to study the implementation of evidence-based treatment for HIV-positive and -negative breast cancer patients in Botswana. Currently, real-world data are lacking on the treatment fidelity and the implementation of guideline-based care in Sub-Saharan Africa and in HIV-prevalent regions, where HIV-infected (HIV+) breast cancer patients have a significantly increased risk of all-cause mortality. This study aims to investigate whether inferior outcomes are related to the quality or extent of guideline implementation or other unrelated factors. The long-term goal is to improve survival outcomes in HIV+ and HIV- breast cancer patients in Sub-Saharan Africa by designing targeted interventions to increase high-quality therapy delivery. Through this K award, Dr. Martei aims to: 1) compare treatment fidelity between HIV+ and HIV- breast cancer patients receiving curative intent therapy and identify HIV modifiers of fidelity; 2) use a mixed methods design and a deviance sample of patients with high and low fidelity to identify socioeconomic and cultural modifiers of fidelity; and 3) using the collaborative intervention planning framework to identify targets for guideline adaptation and develop a menu of implementation strategies and intervention trials to promote treatment fidelity.

# Behavioral Health

## Experiences and Outcomes of Suicidal Individuals with and without Autism in Emergency Departments Nationwide

Shari Jager-Hyman, PhD and Brenna Maddox, PhD, LCP were awarded a two-year grant from NIMH for “Experiences and Outcomes of Suicidal Individuals with and without Autism in Emergency Departments Nationwide.” This mixed methods study will contribute to long-term efforts to reduce deaths by suicide by informing the adaptation and implementation of evidence-based practices for suicide prevention for individuals with autism spectrum disorder (ASD). The study objectives are: (a) to use a retrospective, longitudinal design to compare the experiences and outcomes of individuals with and without ASD who



sought care for suicidal ideation (SI) or suicidal behavior (SB) in emergency departments (EDs) nationwide; and (b) to interview key stakeholders about ways to improve ED-based suicide prevention practices and increase post-ED mental health treatment engagement for individuals with ASD. Results will help policymakers and healthcare workers across the U.S. to better understand critical points of prevention and intervention for suicidal individuals with ASD.

### Validation of a causal model of implementation

Emily Becker-Haimes, PhD received an R01 award to test the generalizability of a conceptual model that posits the causal relationship among variables from organizational and social psychology to predict clinician evidence-based practice (EBP) use. Broadly, the model proposes that organizational factors like climate and culture influence attitudes, norms, and self-efficacy, while other organizational factors like workload, resources, and organizational friction moderate the pathway between intentions and the use of an EBP. This project builds off the work of Dr. Becker-Haimes and colleagues’ recently completed NIMH-funded R21, which demonstrated that this model accounted for up to 75% of variance in implementation of three EBPs in community settings. This R01 will test the generalizability of the causal model in a larger sample from a new group of practitioners, for a different and more widely-used EBP, cognitive-behavioral therapy (CBT). Successful completion would further validate the model, advancing our understanding of the causal pathways in EBP implementation. Results will inform the development of implementation strategies that target modifiable factors explaining substantial variance in intention and in implementation that can be applied broadly across EBPs.

## Leveraging behavioral economics and implementation science to engage suicidal patients in mental health treatment

**Courtney Benjamin Wolk, PhD, and Shari Jager-Hyman, PhD,** were awarded an R21 award from the National Institute of Mental Health to rapidly prototype and test promising, low-cost, acceptable, and feasible strategies to increase patients' attendance at a first mental health visit following identification of suicide risk in primary care. Engagement in mental health treatment reduces risk of death by suicide for patients at high-risk, but suicidal individuals have difficulty imitating and sustaining involvement in mental health services. The study will be conducted within a large, diverse health system that has implemented collaborative care in 8 urban primary care practices. First, the study team will identify characteristics of patients who do and do not attend their first mental health visit following referral. Then, they will conduct a contextual inquiry to identify barriers and facilitators to mental health treatment attendance for individuals at risk of suicide. Finally, they will rapidly prototype, test, and optimize the engagement strategies, which will be informed by behavioral economics and implementation science methods, as well as expert feedback, and will target key mechanisms that impede treatment attendance. The goal of the study is to identify menu of the most promising and feasible implementation strategies to support the initiation of mental health services for patients at risk of suicide that will be tested in a subsequent trial. The long-term goal of this work is to increase engagement in mental health services for suicidal individuals.



# Acute Care/Sepsis

## I-TRANSFER: Improving TRansitions ANd outcomeS oF sEpsis suRvivors

**Kathryn Bowles, PhD, RN, FAAN, FACMI** and colleagues were awarded a new 5-year R01 study from the National Institute of Nursing Research to identify, understand and develop strategies for overcoming barriers to the implementation of effective clinical interventions. Specifically, I-TRANSFER is designed to address several barriers and gaps that may jeopardize the implementation of early post-acute surveillance among sepsis survivors.

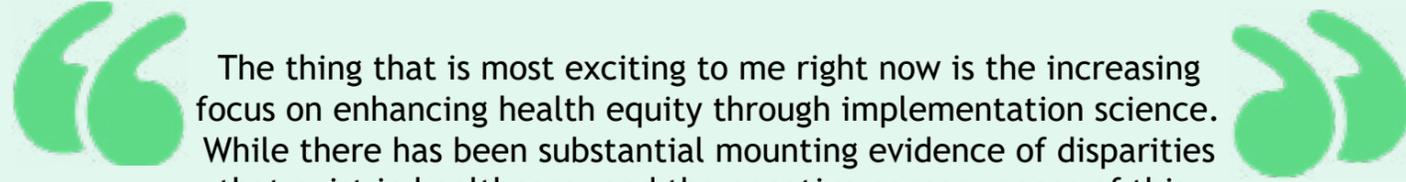
## Improving Opioid Use Disorder Treatment for Hospitalized Patients with Endocarditis

**Rachel French, PhD, RN,** received an F32 award from the National Institute on Drug Abuse to study and optimize delivery of care for opioid use disorder-associated infective endocarditis (OUD-IE) in hospitals. Despite the availability of effective treatment for opioid use disorder and the opportunity to intervene during hospitalization, health care staff tend not to address opioid use disorder during hospitalization for OUD-IE, despite patients' distinctly poor outcomes. Existing models of hospital care for patients with opioid use disorder can inform hospital care delivery for OUD-IE patients, though significant adaptation of these models is needed to meet the needs of OUD-IE patients unique to their prolonged hospital stays. Little is known regarding how to best deploy evidence-based opioid use disorder interventions for medically hospitalized patients. The aims of the proposed study are to: 1) Characterize current practices of health care staff regarding hospital care delivery for OUD-IE patients; 2) Examine the appropriateness, feasibility, and acceptability of implementing evidence-based opioid use disorder care for hospitalized OUD-IE patients; and 3) Adapt an intervention for hospitalized OUD-IE patients and develop a corresponding toolkit of implementation strategies. Findings from this study will increase the currently limited efficacy of care delivery for hospitalized patients with opioid use disorder and ultimately enhance their outcomes.

## ACTUATE-CBC: ACceleraTing the UptAke of TElemedicine for Crisis Burn Care

**Amanda Bettencourt, PhD, APRN, CCRN-K, ACCNS-P** and colleagues received a 4-year Clinical Translational Research Award from the Department of Defense's Military Burn Research Program to develop and test an implementation intervention to increase the uptake of teleconsultation for initial and ongoing acute burn care. Telemedicine is an evidence-based and effective means of connecting a person with a burn injury and the clinician(s) caring for them to the expert burn team regardless of their location. However, despite the availability of the technology and good evidence that it improves patient outcomes, it remains underused. This study will examine the factors influencing emergency department clinician use of teleconsultation with a regional burn center, engage burn and emergency department stakeholders in determining the best process for using whole team burn teleconsultation during a crisis, and develop and test a toolkit aimed at increasing its use. Results will be used to inform civilian burn mass casualty preparedness efforts and military prolonged field care protocols.

# What excites you about implementation science?



The thing that is most exciting to me right now is the increasing focus on enhancing health equity through implementation science. While there has been substantial mounting evidence of disparities that exist in healthcare, and the negative consequences of this, implementation science lends tools to help reduce the disparities and develop and scale effective innovations. I am excited to continue to learn from leaders in the field how we can work to advance health equity research through implementation science.



**-Rebecca Feldman Hamm, MD, MSCE**  
*Winner, Best of D&I Conference 2021*  
Assistant Professor, Obstetrics and Gynecology  
(February 2021)

The need for mental health treatment far surpasses the availability of specialty mental healthcare. Implementation science is a relatively new field with a lot of energy and promising methods for reducing the research to practice gap. Using implementation science methods, I believe we can develop and evaluate novel strategies to support implementation and integration of the most effective mental health treatments in the myriad of settings that serve individuals with unmet mental health needs.

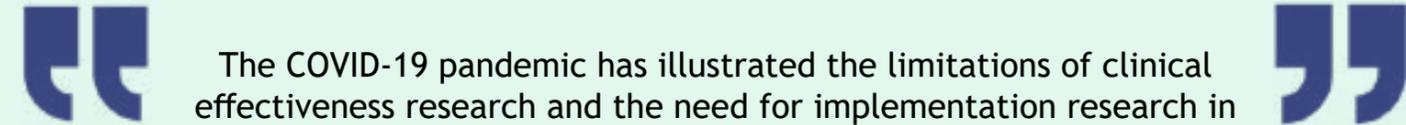


**-Courtney Benjamin Wolk, PhD**  
Assistant Professor, Psychiatry  
(April 2021)

What I enjoy the most about pursuing a research agenda in implementation science is to be able to work with stakeholders such as the Philadelphia Department of Public Health, community partners, and amazing researchers here at Penn who are passionate about applying implementation science principle into their work.



**-Florence Momplaisir, MD, MSHP, FACP**  
Assistant Professor, Medicine  
(June 2021)



The COVID-19 pandemic has illustrated the limitations of clinical effectiveness research and the need for implementation research in humanitarian emergencies. Implementation science provides frameworks and approaches to help ensure that individuals will receive interventions that work. Despite the critical need, few implementation scientists pursue research in this context, so I'm excited about the wealth of possible collaborations and innovative strategies to reduce the burden of disease.



**-Amy Van Pelt, PhD, MPH**  
Postdoctoral Fellow, Psychiatry  
(November 2021)

**Featured PISCE@LDI Members**

# Featured Publications



Aranbarri A, Stahmer AC, Talbott MR, Miller ME, Drahota A, Pellecchia M, Barber AB, Griffith EM, Morgan EH, Rogers SJ. (2021). Examining US Public Early Intervention for Toddlers With Autism: Characterizing Services and Readiness for Evidence-Based Practice Implementation. *Front Psychiatry*.

Becker-Haimes EM, Mandell DS, Fishman J, Williams NJ, Wolk CB, Wislocki K, Reich D, Schaechter T, Brady M, Maples NJ, Creed TA. (2021). Assessing Causal Pathways and Targets of Implementation Variability for EBP use (Project ACTIVE): a study protocol. *Implement Sci Commun*.

Bryant-Stephens T, Williams Y, Kanagasundaram J, Apter A, Kenyon CC, Shults J. (2021). The West Philadelphia asthma care implementation study. *Contemp Clin Trials Commun*.

Davis M, Hoskins K, Phan M, Hoffacker C, Reilly M, Fugo PB, Young JF, Beidas RS. (2021). Screening Adolescents for Sensitive Health Topics in Primary Care: A Scoping Review. *J Adolesc Health*.

Davis M, Jones JD, So A, Benton TD, Boyd RC, Melhem N, Ryan ND, Brent DA, Young JF. (2021). Adolescent depression screening in primary care: Who is screened and who is at risk? *J Affect Disord*.

Frank HE, Last BS, AlRabiah R, Fishman J, Rudd BN, Kratz HE, Harker C, Fernandez-Marcote S, Jackson K, Comeau C, Shoyinka S, Beidas RS. (2021). Understanding therapists' perceived determinants of trauma narrative use. *Implement Sci Commun*.

Hoffecker G, Kanter GP, Xu Y, Matthai W, Kolansky DM, Giri J, Tuteja S. (2022). Interventional cardiologists' attitudes towards pharmacogenetic testing and impact on antiplatelet prescribing decisions. *Per Med*.



Livorsi DJ, Drainoni ML, Reisinger HS, Nanda N, McGregor JC, Barlam TF, Morris AM, Szymczak JE. (2021). Leveraging implementation science to advance antibiotic stewardship practice and research. *Infect Control Hosp Epidemiol*.

Rendle KA, Beidas RS. (2021). Four strategic areas to advance equitable implementation of evidence-based practices in cancer care. *Transl Behav Med*.

Van Pelt A, Beidas RS. (2021). Future Directions for Providing Conceptual Clarity Related to Context in Implementation Comment on "Stakeholder Perspectives of Attributes and Features of Context Relevant to Knowledge Translation in Health Settings: A Multi-Country Analysis". *Int J Health Policy Manag*.

Wexler A, Specker Sullivan L. (2021). Translational Neuroethics: A Vision for a More Integrated, Inclusive, and Impactful Field. *AJOB Neurosci*.

Williamson AA, Okoroji C, Cicalese O, Evans BC, Ayala A, Harvey B, Honore R, Kratchman A, Beidas RS, Fiks AG, Power TJ, Mindell JA. (2021). Sleep Well! An adapted behavioral sleep intervention implemented in urban primary care. *J Clin Sleep Med*.

Beidas RS, Buitenen AM, Mandell DS. (2021). Transforming mental health care delivery through implementation science and behavioral economics. *JAMA Psychiatry*.

Bange EM, Courtright KR, Parikh RB. (2021). Implementing automated prognostic models to inform palliative care: More than just the algorithm. *BMJ Quality & Safety*.

Price J, Becker-Haimes EM, Benjamin Wolk C. (2021). Matched emotional supports in health care (MESH) framework: A stepped care model for health care workers. *Families, Systems, & Health*.

Bauermeister JA, Bonett S, Rosengren AL, Choi SK, Watson D. (2021). Approaches to promoting linkage to and retention in HIV care in the United States: A scoping review. *Current HIV/AIDS Reports*.

Davis M, Johnson C, Pettit AR, Barkin S, Hoffman BD, Jager-Hyman S, King CA, Lieberman A, Massey L, Rivara FP, Sigel E, Walton M, Wolk CB, Beidas RS. (2021). Adapting Safety Check as a universal suicide prevention strategy in pediatric primary care. *Academic Pediatrics*.

Paul ME, Castillo M, Emmanuel P, Bauermeister JA, Mena LA, Sullivan PS, Hightow-Weidman LB. (2021). Scale up mHealth HIV interventions: Site and public health perspectives and lessons learned from P3. *mHealth*.

Stewart RE, Mandell DS, Beidas RS. (2021). Lessons from Maslow: Prioritizing funding to improve the quality of community mental health and substance use services. *Psychiatric Services*.

Beidas RS, Ahmedani BK, Linn KA, Marcus SC, Johnson C, Maye M, Westphal J, Wright L, Beck AL, Buttenheim AM, Daley MF, Davis M, Elias ME, Jager-Hyman S, Hoskins K, Lieberman A, McArdle B, Ritzwoller DP, Small DS, Wolk CB, Williams NJ, Boggs JM. (2021). Study protocol for a type III hybrid effectiveness-implementation trial of strategies to implement firearm safety promotion as a universal suicide prevention strategy in pediatric primary care. *Implementation Science*.

Bonafide CP, Maletsky KD, Coon ER. (2021). The tension between pragmatism and rigor in choosing wisely. *Hospital Pediatrics*.

Creed TA, Kuo PB, Oziel R, Reich D, Thomas M, O'Connor S, Imel ZE, Hirsch T, Narayanan S, Atkins DC. (2021). Knowledge and attitudes toward an artificial intelligence-based fidelity measurement in community cognitive behavioral therapy supervision. *Administration and Policy in Mental Health*.

Hamm RF, Iriye BK, Srinivas SK. (2021). Implementation science is imperative to the optimization of obstetric care. *American Journal of Perinatology*.

Hamm RF, Levine LD, Lane-Fall M, Beidas R. (2021). Daily weekday audit and feedback to clinicians for an inpatient intervention in obstetrics: Is there sustained impact over the weekend? A secondary analysis of a prospective cohort study. *Implementation Science Communications*.



Henry D, Wood S, Moshashane N, Ramontshonyana K, Amutah C, Maleki P, Howlett C, Brooks MJ, Mussa A, Joel D, Steenhoff AP, Akers AY, Morroni C. (2021). Facilitators and barriers to implementation of long-acting reversible contraceptive services for adolescent girls and young women in Gaborone, Botswana. *Journal of Pediatric and Adolescent Gynecology*.

Kilaru AS, Lubitz SF, Davis J, Eriksen W, Siegel S, Kelley D, Perrone J, Meisel ZF. (2021). A state financial incentive policy to improve emergency department treatment for opioid use disorder: A qualitative study. *Psychiatric Services*.



Levy E, Scott S, Tran T, Wang W, Mikkelsen ME, Fuchs BD, Kerlin MP. (2021). Adherence to lung protective ventilation in patients with Coronavirus disease 2019. *Critical Care Explorations. BMJ Open*.

Lewis CC, Powell BJ, Brewer SK, Nguyen AM, Schriger SH, Vejnaska SF, Walsh-Bailey C, Aarons GA, Beidas RS, Lyon AR, Weiner B, Williams N, Mittman B. (2021). Advancing mechanisms of implementation to accelerate sustainable evidence-based practice integration: Protocol for generating a research agenda. *BMJ Open*.

Maxwell CA, Ehrhart MG, Williams NJ, Moore TM, Kendall PC, Beidas RS. (2021). The organizational financial context of publicly-funded mental health clinics: Development and preliminary psychometric evaluation of the agency financial status scales. *Administration and Policy in Mental Health*.

Moore SA, Arnold KT, Beidas RS, Mendelson, T. (2021). Specifying and reporting implementation strategies used in a school-based prevention efficacy trial. *Implementation Research and Practice*.

Schnoll R, Bernstein SL, Kaufman A, Gross R, Catz SL, Cioe PA, Hitsman B, Marhefka SL, Pacek LR, Vidrine DJ, Vilardaga R, Edelman EJ, McClure JB, Ashare R, Lockhart E, Crothers K. (2021). COVID-19 challenges confronted by smoking cessation clinical trials for people living with HIV: The experience of grantees of the US National Cancer Institute. *Nicotine & Tobacco Research*.

Takvorian SU, Bekelman J, Beidas RS, Schnoll R, Clifton ABW, Salam T, Gabriel P, Wileyto EP, Scott CA, Asch DA, Buttenheim AM, Rendle KA, Chaiyachati K, Shelton RC, Ware S, Chivers C, Schuchter LM, Kumar P, Shulman LN, O'Connor N, Lieberman A, Zentgraf K, Parikh RB. (2021). Behavioral economic implementation strategies to improve serious illness communication between clinicians and high-risk patients with cancer: Protocol for a cluster randomized pragmatic trial. *Implementation Science*.



Van Pelt AE, Beidas RS, Scott JC, Moore TM, Ahmed C, Morales KH, Thuto B, Tshume O, Gur RC, Holmes JH, Matshaba M, Lowenthal ED. (2021). Acceptability of a computerized battery to identify neurocognitive impairment among children and adolescents in Botswana. *Global Implementation Research and Applications*.

Van Pelt AE, Lowenthal ED, Phoi O, Tshume O, Matshaba M, Beidas RS. (2021). Medical stakeholder perspectives on implementing a computerized battery to identify neurocognitive impairments among youth in Botswana. *AIDS Care*.

Fishman J, Yang, C, & Mandell, D. (2021). Attitude theory and measurement in implementation science: a secondary review of empirical studies and opportunities for advancement. *Implementation Science*.

Schondelmeyer AC, Bettencourt AP, Xiao R, Beidas RS, Wolk CB, Landrigan CP, Brady PW, Brent CR, Parthasarathy P, Kern-Goldberger AS, Sergay N, Lee V, Russell CJ, Prasto J, Zaman S, McQuiston K, Lucey K, Solomon C, Garcia M, Bonafide CP. (2021). Evaluation of an educational outreach and audit and feedback program to reduce continuous pulse oximetry use in hospitalized infants with stable bronchiolitis: A nonrandomized clinical trial. *JAMA Network Open*.

Barr J, Paulson SS, Kamdar B, Ervin JN, Lane-Fall M, Liu V, Kleinpell R. (2021). The coming of age of implementation science and research in critical care medicine. *Critical Care Medicine*.

Embry V, Macy RJ, Moracco KE, Scheffey K, Moore A, McCort A, Taraskiewicz L. (2021). From "homegrown" to research-ready: converting an existing practitioner-developed violence prevention intervention into an evaluable intervention. *Health Promotion Practice*.

Kanine RM, Bush ML, Davis M, Jones JD, Sbrilli MD, Young JF. (2021). Depression prevention in pediatric primary care: Implementation and outcomes of interpersonal psychotherapy-adolescent skills training. *Child Psychiatry & Human Development*.

Stewart, R. E., Shen, L., Kwon, N., Vigderman, J., Kramer, S., Mandell, D., Candon, M., Lamb, R., & Rothbard, A. (2021). Transporting to treatment: Evaluating the effectiveness of a mobile engagement unit. *Journal of Substance Abuse Treatment*.

Maddox BB, Dickson KS, Stadnick NA, Mandell DS, Brookman-Frazee L. (2021). Mental health services for autistic individuals across the lifespan: Recent advances and current gaps. *Current Psychiatry Reports*.

Ralefala T, Mokokwe L, Jammalamadugu S, Legobere D, Motlhoa WS, Oyekunle AA, Grover S, Barg FK, Shulman LN, Martei YM. (2021). Provider barriers and facilitators of breast cancer guideline-concordant therapy delivery in Botswana: A consolidated framework for implementation research analysis. *Oncologist*.

Hart JL, Hong D, Summer A, Schnoll RA. (2021). Stakeholders' views on reducing psychological distress in chronic obstructive pulmonary disease. *Journal of Pain and Symptom Management*.



Jenssen BP, Schnoll R, Beidas R, Bekelman J, Bauer AM, Scott C, Evers-Casey S, Nicoloso J, Gabriel P, Asch DA, Buttenheim A, Chen J, Melo J, Shulman LN, Clifton ABW, Lieberman A, Salam T, Zentgraf K, Rendle KA, Chaiyachati K, Shelton R, Wileyto EP, Ware S, Leone F. (2021). Rationale and protocol for a cluster randomized pragmatic clinical trial testing behavioral economic implementation strategies to improve tobacco treatment rates for cancer patients who smoke. *Implementation Science*.



Last BS, Buttenheim AM, Timon CE, Mitra N, Beidas RS. (2021). Systematic review of clinician-directed nudges in healthcare contexts. *BMJ Open*.

Watach AJ, Hwang D, Sawyer AM. (2021). Personalized and patient-centered strategies to improve positive airway pressure adherence in patients with obstructive sleep apnea. *Patient Preference and Adherence*.

Hamm, R. F., Beidas, R., Srinivas, S. K., & Levine, L. D. (2021). Identifying the effective components of a standardized labor induction protocol: Secondary analysis of a randomized, controlled trial. *The Journal of Maternal-Fetal & Neonatal Medicine*.

Kerlin MP, Small D, Fuchs BD, Mikkelsen ME, Wang W, Tran T, Scott S, Belk A, Silvestri JA, Klaiman T, Halpern SD, Beidas RS. (2021). Implementing nudges to promote utilization of low tidal volume ventilation (INPUT): A stepped-wedge, hybrid type III trial of strategies to improve evidence-based mechanical ventilation management. *Implementation Science*.



Azad, G. F., Minton, K. E., Mandell, D. S., & Landa, R. J. (2021). Partners in school: An implementation strategy to promote alignment of evidence-based practices across home and school for children with autism spectrum disorder. *Administration and Policy in Mental Health and Mental Health Services Research*.

Kim, B., Weatherly, C., Wolk, C. B., & Proctor, E. K. (2021). Measurement of unnecessary psychiatric readmissions in the context of care transition interventions: A scoping review. *BMJ Open*.

Kilaru, A. S., Lubitz, S. F., Davis, J., Eriksen, W., Siegel, S., Kelley, D., Perrone, J., & Meisel, Z. F. (2021). A state financial incentive policy to improve emergency department treatment for opioid use disorder: A qualitative study. *Psychiatric Services*.

Henry, D., Wood, S., Moshashane, N., Ramontshonyana, K., Amutah, C., Maleki, P., Howlett, C., Brooks, M. J., Mussa, A., Joel, D., Steenhoff, A. P., Akers, A. Y., & Morroni, C. (2021). Facilitators and barriers to implementation of long-acting reversible contraceptive services for adolescent girls and young women in Gaborone, Botswana. *Journal of Pediatric and Adolescent Gynecology*.

Kuriyan, A., Kinkler, G., Cidav, Z., Kang-Yi, C., Eiraldi, R., Salas, E., & Wolk, C. B. (2021). Team strategies and tools to enhance performance and patient safety (TeamSTEPPS) to improve collaboration in school mental health: Protocol for a mixed methods hybrid effectiveness-implementation study. *JMIR Research Protocols*.

Williams, N. J., Candon, M., Stewart, R. E., Byeon, Y. V., Bewtra, M., Buttenheim, A. M., Zentgraf, K., Comeau, C., Shoyinka, S., & Beidas, R. S. (2021). Community stakeholder preferences for evidence-based practice implementation strategies in behavioral health: A best-worst scaling choice experiment. *BMC Psychiatry*.

Hamm, R. F., Levine, L. D., Nelson, M. N., & Beidas, R. (2021). Implementation of a calculator to predict cesarean during labor induction: A qualitative evaluation of the clinician perspective. *American Journal of Obstetrics & Gynecology Maternal-Fetal Medicine*.

Last, B. S., Schriger, S. H., Timon, C. E., Frank, H. E., Buttenheim, A. M., Rudd, B. N., Fernandez- Marcote, S., Comeau, C., Shoyinka, S., & Beidas, R. S. (2021). Using behavioral insights to design implementation strategies in public mental health settings: A qualitative study of clinical decision-making. *Implementation Science Communications*.



Hicks, J. K., El Roubi, N., Ong, H. H., Schildcrout, J. S., Ramsey, L. B., Shi, Y., Tang, L. A., Aquilante, C. L., Beitelshes, A. L., Blake, K. V., Cimino, J. J., Davis, B. H., Empey, P. E., Kao, D. P., Lemkin, D. L., Limdi, N. A., Lipori, G. P., Rosenman, M. B., Skaar, T. C., Teal, E., ... Peterson, J. F. (2021). Opportunity for genotype-guided prescribing among adult patients in 11 U.S. health systems. *Clinical Pharmacology and Therapeutics*.

Wolk, C. B., Alter, C. L., Kishton, R., Rado, J., Atlas, J. A., Press, M. J., Jordan, N., Grant, M., Livesey, C., Rosenthal, L. J., & Smith, J. D. (2021). Improving payment for collaborative mental health care in primary care. *Medical Care*.

Wolk, C. B., Schondelmeyer, A. C., Barg, F. K., Beidas, R., Bettencourt, A., Brady, P. W., Brent, C., Eriksen, W., Kinkler, G., Landrigan, C. P., Neergaard, R., Bonafide, C. P., & Pediatric Research in Inpatient Settings (PRIS) Network (2021). Barriers and facilitators to guideline-adherent pulse oximetry use in bronchiolitis. *Journal of Hospital Medicine*.

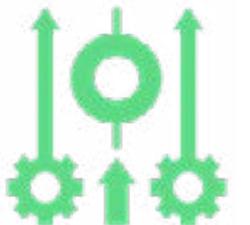
Siegel, S. D., Laurenceau, J. P., Hill, N., Bauer, A. M., Flitter, A., Ziedonis, D., Stevens, N., Hosie Quinn, M., Leone, F., Beidas, R., Kimberly, J., & Schnoll, R. A. (2021). Assessing barriers to providing tobacco use disorder treatment in community mental health settings with a revised version of the Smoking Knowledge, Attitudes, and Practices (S-KAP) instrument. *Addictive Behaviors*.

Maxwell, C. A., Ehrhart, M. G., Williams, N. J., Moore, T. M., Kendall, P. C., & Beidas, R. S. (2021). The organizational financial context of publicly-funded mental health clinics: Development and preliminary psychometric evaluation of the agency financial status scales. *Administration and Policy in Mental Health and Mental Health Services Research*.

Last BS, Buttenheim AM, Futterer AC, Livesey C, Jaeger J, Stewart RE, Reilly M, Press MJ, Peifer M, Wolk CB, Beidas RS. (2021). A pilot study of participatory and rapid implementation approaches to increase depression screening in primary care. *BMC Fam Pract*.



**65 publications by PISCE@LDI members were featured in our newsletter, more than twice as many as in 2020.**



# PISCE@LDI'S COVID-19 Work

Opinion

The Philadelphia Inquirer

## The wicked problem of booster shots for Americans | Expert Opinion

We'll likely need booster shots, but right now we should prioritize unvaccinated people around the world.

by Amelia E. Van Pelt and Angela K. Shen,  
Published Aug 24, 2021; read full article [here](#).

### D&I Conference Posters



*Adapting and disseminating resilience supports during COVID-19 and beyond* - Courtney Wolk, Rebecca Neergaard, Maria Nelson, Lisa Bellini, Kelley Kugler, Emily Becker-Haimes



*Trust and influence in vaccine messengers and messages for routine and COVID-19 vaccines* - Angela K. Shen, Safa Browne, Tuhina Srivastava, Melanie Kornides, Andy SL Tan

## PUBLICATIONS

Last BS, Schriger SH, Becker-Haimes EM, Fernandez-Marcote S, Dallard N, Jones B, Beidas RS. (2021). [Economic Precarity, Financial Strain, and Job-Related Stress Among Philadelphia's Public Mental Health Clinicians](#). *Psychiatr Serv*.

Schmidt, H., Weintraub, R., Williams, M.A., Miller, K., Bottenheim, A., Sadecki, E., Wu, H., Doiphode, A., Nagpal, N., Gostin, L.O. & Shen, A. (2021). [Equitable allocation of COVID-19 vaccines in the United States](#). *Nat. Med.*

Klaiman, T., Silvestri, J. A., Srinivasan, T., Szymanski, S., Tran, T., Oredeko, F., Sjoding, M. W., Fuchs, B. D., Maillie, S., Jablonski, J., Lane-Fall, M. B., & Kerlin, M. P. (2021). [Improving Prone Positioning for Severe Acute Respiratory Distress Syndrome during the COVID-19 Pandemic. An Implementation-Mapping Approach](#). *Ann. Am. Thorac. Soc.*



## Implementation Science: What Is It and Why Is It Crucial in Health Care?

November 11, 2021 | by Lauren Malecki

There's often a disconnect between what we know and what we do in health care. For example, even though we have made unprecedented developments with safe and effective COVID-19 vaccinations, there are still a number of Americans who remain hesitant, and there have been challenges in national distribution and access. This is where a field of study called implementation science becomes a powerful tool — for example, these experts are studying the disconnect between the rigorous evidence for vaccines, and the myriad factors resulting in a research to practice gap.

Gaps between research and practice happen in every setting and disease area. Implementation scientists aim to understand barriers (what makes it harder to implement) and facilitators (what makes it easier to implement), and design and test different strategies to scale evidence-based practices, to ensure that the promise of scientific discovery is realized.



Rinad Beidas, PhD

*“What gets me up in the morning is the opportunity to have an impact — and to move the needle in health care delivery in order to make sure that evidence-based practices are available to everyone”*

### Penn Medicine Leads the Way

As a learning health care system, Penn Medicine is a pioneer in implementing new practices to transform health care. Beidas has been working for the past decade to bring the implementation science perspective to Penn since she joined the faculty in 2012. Her vision is to make Penn Medicine the leading institution in implementation research, education, and practice.

The same year Beidas came to Penn, an Implementation Science Working Group launched, led by **John Kimberly, PhD**, and **Karen Glanz, PhD**, since so many people were asking what it was, if it was useful, and worth investing in. Efforts have been underway since then including coursework developed in the Perelman School of Medicine's (PSOM) Master of Science in Health Policy Research (MSHP) program. In 2018, the Penn Implementation Science Center at the Leonard Davis Institute (PISCE@LDI) was officially launched. The leadership team includes Beidas as founding director; **Meghan Lane-Fall, MD, MSHP**, director of Acute Care Implementation Research for the center and an associate professor of Anesthesiology and Critical Care; **Christopher Bonafide, MD, MSCE**, associate director and an associate professor of Pediatrics; **Katharine Rendle, PhD, MSW, MPH**, associate director and an assistant professor of Family Medicine and Community Health; and **Courtney Benjamin Wolk, PhD**, associate director and an assistant professor of Psychiatry.



Today, Penn is poised to become an international leader in implementation research, education, and practice — consistent with Beidas's vision. The Implementation Science Center has over 300 members from 10 schools across Penn, and over 50 departments, centers, and institutes. They have trained over 400 individuals in implementation science, and the center has a robust grant portfolio of 39+ NIH grants and a growing cadre of faculty with expertise in this area. The Penn Implementation Science Institute, a one-week training program, has also been featured as an exemplar institute in a recent publication by NIH leaders.

TO READ MORE:



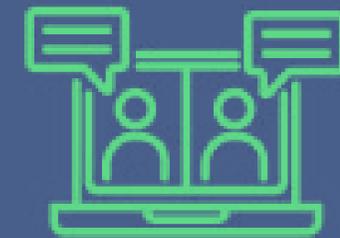
<https://www.pennmedicine.org/news/news-blog/2021/november/implementation-science-what-is-it-and-why-is-it-crucial-in-health-care>

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