

PISCIE@LDI

Penn Implementation Science Center
@ The Leonard Davis Institute

**YEAR-IN-REVIEW:
2020**

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,

2020 has been an incredibly difficult year. We are so grateful for this community, the resources that we have available, the existence of a science that can help us answer how best to implement evidence-based practices equitably and effectively, and the support of our institution. Despite the challenges we have experienced this year, it has been a tremendously productive one for our community.

We are a community of over 300 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 2020, Penn has 39 active NIH grants with over 27 million dollars in direct costs with a number of center grants dedicated to implementation science. Our educational mission has also flourished. In partnership with the MsHP, we have trained 289 people in implementation science since 2012, many of whom are a part of our community now. We have many exciting activities in store for 2021 to continue to build our community.

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



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Director, Center for Digital Health

2020 in Numbers

Membership

- 325 total members, 248 of whom come from Penn/CHOP, 35% increase since 2019
- Members come from 10 schools and more than 50 different departments and institutes across the University of Pennsylvania

Grants

- 39 active NIH grants in FY 2020 between Penn and CHOP with over \$26.7 million in direct costs
- Supported 34 submitted grants in 2019-20, 10 of which have been funded so far

Training

- We offered MsHP HPR 611 in Fall 2020 and HPR 612 in Summer 2020; total enrollment 28 individuals
- We offered the MsHP Implementation Science Institute in Summer 2020 training 63 internal and external individuals
- Since 2012, 289 individuals have taken our HPR classes and attended ISI

Events

- We held 4 Works-in-Progress (WIP) meetings in 2020; 25 people attended on average
- 7 presentations and 19 posters representing the PISCE community at the 2020 AcademyHealth Conference on the Science of Dissemination and Implementation in Health

Events

February 17th, 2020 – WIP

Lily Brown, PhD, presented on specific aims for an R01 focused on understanding clinical decision making around suicide risk flags and Steve Marcus, PhD, presented on specific aims for an R01 on disclosure of suicide in primary care.

June 17th, 2020 – WIP

Kate Courtright, MD, MSHP, presented on a new study proposal about tele-palliative care consultation in nursing homes during COVID-19 and Sara Kornfield, PhD, presented on specific aims for an R21 on implementing bedside buprenorphine induction for moms with Opioid Use Disorder in the NICU.

December 5th, 2020 – CFAR Research Retreat

A virtual scientific symposium co-hosted by Penn CFAR and PISCE@LDI, with Victoria Cargill, MD, MSCE, as the keynote speaker.

June 3rd-5th, 2020 – Implementation Science Institute

July 2nd-August 7th, 2020 – HPR 612

Advanced Topics in Implementation Science in Health was offered for the first time this summer.

November 5th, 2020 – WIP

Rachel Shelton, ScD, MPH, and Krisda Chaiyachati, MD, MPH, MsHP, led a facilitated discussion on health equity and implementation science, co-sponsored by Penn ISC³.



Featured Projects

Advancing the quality of cancer care through behavioral economics and implementation science

Rinad Beidas, PhD, Justin Bekelman, MD, and Robert Schnoll, PhD received funding from the National Cancer Institute to use implementation science and behavioral economics to increase use of evidence-based practices in cancer care, with health equity as a focus across all projects. Penn becomes the 7th Implementation Science Center in Cancer Control (ISC3) funded by the NCI as part of the Cancer Moonshot.



Handoffs and transitions in critical care – Understanding scalability

Meghan Lane-Fall, MD was awarded a R01 grant to study the implementation of a standardized handoff protocol in adult and pediatric ICUs. While standardized post-surgical handoffs are an intervention deemed high priority by the American Heart Association, there is inconsistent adoption of this by hospitals. This pragmatic Hybrid Type 2 effectiveness-implementation study will have a dual focus on demonstrating improvements in both short-term patient outcomes and implementation outcomes.

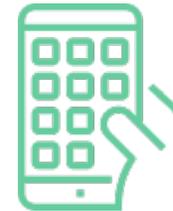


CP3 Study: Cardiovascular Prevention for Psoriasis and Psoriatic Arthritis

Joel Gelfand, MD, MSCE received a grant from the National Psoriasis Foundation to improve implementation of preventive cardiovascular care with a focus on the use of statins per guidelines for patients with psoriasis and psoriatic arthritis. This research will aim to leverage implementation science to shift screening for, and management of, dyslipidemia from primary care physicians to the specialists who mostly care for patients with psoriatic disease, dermatologists and rheumatologists.

Reducing challenging behaviors in children with autism through digital health

Heather Nuske, PhD was awarded a K23 grant to develop and pilot test a personalized mobile-health emotion regulation app that will pair heart rate tracking with digital tools to support teachers' use of evidence-based practices with children with autism spectrum disorder. As part of this grant, Dr. Nuske will evaluate the acceptability, feasibility, and appropriateness of the app by conducting interviews and observations, use rapid-cycle prototyping to refine the app, and then conduct a randomized waitlist field trial to test the app.



Featured Projects



The role of pediatric interconception care in preventing adverse birth outcomes

Emily Gregory, MD, MHS was awarded a K23 grant to leverage existing contact between pediatric health systems and mothers by utilizing a pediatric-based nurse intervention to reduce preterm births. Many interconception women with a history of preterm birth do not receive preventive health care but do have frequent contact with pediatric health systems in their roles as mothers. Dr. Gregory will conduct a pilot pragmatic randomized trial to evaluate if nurse care coordination, in addition to embedded motivational interviewing, can increase the receipt of preventive care.



A comparative effectiveness trial of strategies to implement firearm safety promotion as a universal suicide prevention strategy in pediatric primary care

Rinad Beidas, PhD received funding from the NIMH to study two different approaches for implementing the SAFE Firearm program, an evidence-based program that involves brief counseling and providing a free cable lock to parents if they would like one, in pediatric primary care. This grant will build on previous research conducted in partnership with the Mental Health Research Network.

A hybrid type 1 effectiveness-implementation study of social incentive strategies to increase physical activity

Karen Glanz, PhD, MPH, and Mitesh Patel, MD, MBA were awarded a R01 grant to adapt and test the effectiveness of two successful social incentive-based interventions to increase physical activity. The two interventions are a gamification strategy and financial incentives donated to charity participant's behalf. Following an initial phase of community-participatory adaptation of the two proven social-incentive intervention strategies, a three-arm, cluster-randomized trial of 225 families will be conducted to evaluate the two social incentive interventions in the community. This study focuses on scalable approaches to address health disparities in physical activity by partnering with community organizations in low-income and minority neighborhoods, using behavioral economics to deploy low-cost social incentive interventions, and applying implementation science frameworks from the Consolidated Framework for Intervention Research (CFIR) to improve adoption and dissemination.



Featured Projects

Preparing for use of a computerized battery to identify neurocognitive impairments among HIV-affected youth in Botswana

Amy Van Pelt was awarded a F31 training award that will help to lay the foundation for implementing the Penn Computerized Neurocognitive Battery (CNB) in Botswana. This research will aim to evaluate whether the CNB can distinguish between children living with HIV with and without functionally-significant neurodevelopmental deficits, assess the acceptability of the CNB among youth, and identify essential elements for the effective use of the CNB in clinical settings.



Managed problem solving for ART adherence and HIV care retention delivered by community health workers: A stepped wedge hybrid type II effectiveness implementation

Florence Momplaisir, MD, MSHP, FACP, Robert Gross, MD, MSCE, and Rinad Beidas, PhD were awarded a R01 grant to test if an adapted evidence-based practice, Managed Problem Solving (MAPS+), delivered by community health workers (CHWs) can improve viral suppression, retention, and reach of HIV care in the City of Philadelphia. CHWs will be located in clinics to implement MAPS+ to improve viral suppression and care retention in people living with HIV. They will conduct a hybrid type II effectiveness-implementation trial with a stepped-wedge cluster randomized design in 12 clinics to test MAPS+ compared to usual care using a set of implementation strategies that they believe will best support implementation.



A standardized labor induction protocol to reduce primary cesarean and racial disparities in labor outcomes: A prospective cohort study

Rebecca Feldman Hamm, MD, MSCE was awarded a K23 grant to study the effectiveness of a standardized labor protocol. Using protocols to standardize care has been shown to decrease adverse outcomes and reduce racial disparities in health care by reducing care variation across medicine. As part of this grant, Dr. Feldman Hamm will compare obstetric outcomes pre- and post-implementation of the labor induction protocol into routine care at two diverse sites, determine if the induction protocol reduces racial disparities in obstetric outcomes, and utilize mixed methods to understand acceptability, penetration, and fidelity of the induction protocol.



Featured PISCE@LDI Members

January 2020 - Meghan Lane-Fall, MD, MSHP

“On the developmental spectrum, I think of implementation science as a teenager. It knows how to walk and talk and put on deodorant, but it’s still trying to figure itself out...Personally, I want to see human factors engineering considered more in implementation science studies, because we have a lot to learn from engineers about the co-creation of interventions and implementation strategies. I also see opportunities to use epidemiologic approaches to contextual inquiry that might speed up the rate of discovery in implementation science. It’s easy to see how one might build and sustain a career in implementation science, which is thrilling.”

November 2020 –
Danielle Cullen, MD, MPH, MSHP

“When I took the Introduction to Implementation Science class at Penn, it felt like the missing piece to my puzzle—not only providing the frameworks needed to understand effective implementation, but also the tools to plan for implementation beginning at the point of intervention development and evaluations of effectiveness...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.”

April 2020 – Becca Stewart, PhD

“Beyond knowing that narratives work, I don’t think we’ve scratched the surface on how to make research evidence more compelling to patients, families, or practitioners. I think scientists (who are naturally swayed by data) forget that presentations of research data are not sufficiently compelling to most. On the other side of the equation, it is also a very exciting time to be interested in behavioral health outcomes. Most payers and organizations embrace outcomes and paying-for-value conceptually, yet details remain murky on how to fairly measure (or pay) for them. I’m enthused by any small step towards this quandary.”

June 2020 – Kate Rendle, PhD, MSW, MPH

“What excites me most about the field of implementation science is a commitment to context and all the complexities it entails. As an anthropologist, I am well-trained to illuminate the complexities of human experience and understand how they shape phenomenon within a specific context, but not necessarily intervene upon these experiences. As an epidemiologist, on the other hand, I often use methods to isolate these complexities in order to understand the direct effects of a specific exposure or intervention. For me, implementation science is the space where I can do both.”



Featured Publications

Barrera-Cancedda AE, Riman KA, Shinnick JE, **Buttenheim AM**. [Implementation strategies for infection prevention and control promotion for nurses in Sub-Saharan Africa: A systematic review](#). *Implementation Science*. Dec 2019.

Williams NJ, **Wolk CB**, **Becker-Haimes EM**, **Beidas RS**. [Testing a theory of strategic implementation leadership, implementation climate, and clinicians' use of evidence-based practice: A 5-year panel analysis](#). *Implementation Science*. Feb 2020.

Lee YSH, Cleary PD, **Nembhard IM**. [Effects of leader tactics on the creativity, implementation, and evolution of ideas to improve healthcare delivery](#). *Journal of General Internal Medicine*. Aug 2020.

Triebwasser JE, Janssen MK, Hirshberg A, **Srinivas SK**. [Successful implementation of text-based blood pressure monitoring for postpartum hypertension](#). *Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health*. Sep 2020.

Keddem S, Agha AZ, Long JA, Shasha B, Hausmann LRM, **Shea JA**. [The gears of knowledge translation: Process evaluation of the dissemination and implementation of a patient engagement toolkit](#). *Journal of General Internal Medicine*. Nov 2020.

Klaiman T, Silvestri JA, Srinivasan T, Szymanski S, Tran T, Oredoko F, Sjoding MW, Fuchs BD, Maillie S, Jablonski J, **Lane-Fall MB**, **Kerlin MP**. [Improving prone positioning for severe ARDS during the COVID-19 pandemic: An implementation mapping approach](#). *Annals of the American Thoracic Society*. 2020.



Featured Publications

Landis-Lewis Z, Kononowech J, Scott WJ, Hogikyan RV, **Carpenter JG**, Periyakoil VS, Miller SC, Levy C, **Ersek M**, Sales A. [Designing clinical practice feedback reports: Three steps illustrated in Veterans Health Affairs long-term care facilities and programs.](#) *Implementation Science*. Jan 2020.

Siegel SD, Lerman C, Flitter A, **Schnoll RA**. [The use of the nicotine metabolite ratio as a biomarker to personalize smoking cessation treatment: Current evidence and future directions.](#) *Cancer Prevention Research*. Mar 2020.

Mandell DS. [Traveling without a map: An incomplete history of the road to implementation science and where we may go from here.](#) *Implementation Science*. Mar 2020.

Lewis CC, Boyd MR, Walsh-Bailey C, Lyon AR, **Beidas R**, Mittman B, Aarons GA, Weiner BJ, Chambers DA. [A systematic review of empirical studies examining mechanisms of implementation in health.](#) *Implementation Science*. Apr 2020.

Becker-Haimes EM, Byeon YV, **Frank HE**, Williams NJ, Kratz HE, **Beidas RS**. [Identifying the organizational innovation-specific capacity needed for exposure therapy.](#) *Depression and Anxiety*. May 2020.

Cidav Z, **Mandell D**, Pyne J, **Beidas R**, Curran G, **Marcus S**. [A pragmatic method for costing implementation strategies using time-driven activity-based costing.](#) *Implementation Science*. May 2020.

Last BS, **Rudd BN**, Gregor CA, Kratz HE, Jackson K, Berkowitz S, Zinny A, Cliggitt LP, Adams DR, Walsh LM, **Beidas RS**. [Sociodemographic characteristics of youth in a trauma focused-cognitive behavioral therapy effectiveness trial in the city of Philadelphia.](#) *Journal of Community Psychology*. May 2020.

Leeman J, Askelson N, Ko LK, Rohweder CL, **Avelis J**, Best A, Friedman D, **Glanz K**, Seegmiller L, Stradtman L, Vanderpool RC. [Understanding the processes that Federally Qualified Health Centers use to select and implement colorectal cancer screening interventions: A qualitative study.](#) *Translational Behavioral Medicine*. May 2020.



Featured Publications

Taylor SP, Kowalkowski MA, **Beidas RS**. [Where is the implementation science? An opportunity to apply principles during the COVID19 pandemic](#). *Clinical Infectious Diseases*. May 2020.

Azad GF, Minton KE, **Mandell DS**, Landa RJ. [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*. Jul 2020.

Foa EB, McLean CP, **Brown LA**, Zang Y, Rosenfield D, **Zandberg LJ**, Ealey W, Hanson BS, Hunter LR, Lillard IJ, Patterson TJ, Rosado J, Scott V, Weber C, Wise JE, Zamora CD, Mintz J, Young-McCaughan S, Peterson AL, STRONG STAR Consortium. [The effects of a prolonged exposure workshop with and without consultation on provider and patient outcomes: A randomized implementation trial](#). *Implementation Science*. Jul 2020.

Schriger SH, **Becker-Haimes EM**, Skriner L, **Beidas RS**. [Clinical supervision in community mental health: Characterizing supervision as usual and exploring predictors of supervision content and process](#). *Community Mental Health Journal*. Jul 2020.

Beidas RS, Wiltsey Stirman S. [Realizing the promise of learning organizations to transform mental health care: Telepsychiatry care as an exemplar](#). *Psychiatric Services*. Aug 2020.

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Wood SM, White K, Peebles R, Pickel J, Alausa M, Mehringer J, **Dowshen N**. [Outcomes of a rapid adolescent telehealth scale-up during the COVID-19 pandemic](#). *Journal of Adolescent Health*. Aug 2020.



Featured Publications

Woods-Hill CZ, Papili K, Nelson E, Lipinski K, Shea J, **Beidas R**, **Lane-Fall M**. [Harnessing implementation science to optimize harm prevention in critically ill children: A pilot study of bedside nurse CLABSI bundle performance in the pediatric intensive care unit.](#) *American Journal of Infection Control*. Aug 2020.

Cowden C, Mwananyanda L, Hamer DH, Coffin SE, Kapasa ML, Machona S, **Szymczak JE**. [Healthcare worker perceptions of the implementation context surrounding an infection prevention intervention in a Zambian neonatal intensive care unit.](#) *BMC Pediatrics*. Sep 2020.

Davis M, **Wolk CB**, **Jager-Hyman S**, **Beidas RS**, **Young JF**, **Mautone JA**, **Buttenheim AM**, **Mandell DS**, **Volpp KG**, **Wislocki K**, Futterer A, Marx D, Dieckmeyer EL, **Becker-Haimes EM**. [Implementing nudges for suicide prevention in real-world environments: Project INSPIRE study protocol.](#) *Pilot and Feasibility Studies*. Sep 2020.

Williamson AA, **Milaniak I**, Watson B, Cicalese O, Fiks AG, Power TJ, Barg FK, **Beidas RS**, Mindell JA, **Rendle KA**. [Early childhood sleep intervention in urban primary care: Caregiver and clinician perspectives.](#) *Journal of Pediatric Psychology*. Sep 2020.

Arnold KT, Pollack Porter KM, Frattaroli S, Durham RE, Mmari K, Clary LK, Mendelson T. [Factors that influenced adoption of a school-based trauma-informed universal mental health intervention.](#) *Prevention Science*. Nov 2020.

Kaufmann TL, **Rendle KA**, Aakhus E, Nimgaonkar V, Shah A, Bilger A, Gabriel PE, Trotta R, Braun J, Shulman LN, Bekelman JE, Barg FK. [Views from patients with cancer in the setting of unplanned acute care: Informing approaches to reduce health care utilization.](#) *JCO Oncology Practice*. Nov 2020.

Varughese LA, **Lau-Min KS**, Cambareri C, Damjanov N, Massa R, Reddy N, Oyer R, Teitelbaum U, **Tuteja S**. [DPYD and UGT1A1 pharmacogenetic testing in patients with gastrointestinal malignancies: An overview of the evidence and considerations for clinical implementation.](#) *Pharmacotherapy*. Nov 2020.

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How the ACA, COVID-19 and Electronic Records Are Accelerating Implementation Science at Penn

Penn LDI's Rinad Beidas and Meghan Lane-Fall Reflect on an Extraordinary Decade of Change

Date: December, 2020

Hoag Levins



Photos: Hoag Levins

LDI Senior Fellows and associate professors at the University of Pennsylvania's Perelman School of Medicine Rinad Beidas, PhD, and Meghan Lane-Fall, MD, MSHP, are pushing the bounds of implementation science research across the Penn



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