

Population Health Improvement Awards: Supporting Community and Academic Capacity to Partner in Research and Improve Population Health

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Abstract

The Duke Clinical and Translational Science Institute Community Engaged Research Initiative began its Population Health Improvement Awards grant program in 2017. This program builds community-engaged research capacity by promoting the formation of community-academic research teams, educating researchers about equitable partnerships, and empowering community members and organizations to access academic research resources. With a focus on community-identified priorities, the program purposefully engages local communities in an enterprise that has traditionally labeled community members as “participants” rather than “partners.” Key elements of the program include innovation, relationship building, and power sharing; education and research system navigation; iterative adaptation using the Plan-Do-Study-Act framework; and continual program improvements based on applicant feedback to ensure that the program becomes a national leader in funding local community-engaged research partnerships.

Population health improvement activities and research efforts have been increasing in academic health institutions, especially with rising attention being paid by researchers and policymakers to pervasive health disparities and their fundamental causes (Auerbach, 2015; Bogard et al., 2017). The term “population health” often refers to the health and determinants of health among a group of patients receiving health care from a particular health care institution or system. Yet population health also refers to the health and determinants of health of persons residing in a particular region or community, irrespective of whether or where they receive health care. This comprehensive view of population health considers health care as one among many core drivers of population health status, maintains a focus on health equity, and is a principal focus of new departments, centers, and institutes emerging at schools of medicine across the country (Gourevich et al., 2019, p. 2).

The community-engaged research (CEnR) approach recognizes the importance of multistakeholder collaboration and leadership, especially among traditionally underrepresented stakeholders, for speeding and optimizing the uptake of innovations to transform population health outcomes (Ahmed & Palermo, 2010; Ziegahn et al., 2020). Groups that have historically been left out of leading and shaping health research include caregivers, families, patient advocates, public health departments, social services, community-based organizations, and insurance companies and

payers (Weinstein et al., 2017). CEnR ensures that community-identified priorities and interests are at the forefront of formulating research questions rather than being an afterthought. By engaging underrepresented and marginalized groups early and often in all phases of the research process, CEnR has been shown to increase participation in research, identify treatment and prevention strategies that are uniquely effective for special populations, translate research more quickly to improvements in health, and increase both academic and community capacity (Wallerstein & Duran, 2010).

Systemic barriers to engaging historically underrepresented populations have been well documented, including mistrust, perceived harm, participant burden, language and transportation barriers, childcare needs, lack of health literacy and research awareness, and lack of time (Clark et al., 2019; Erves et al., 2017). Academic institutional barriers to CEnR vary depending on the type of institution type but are often significant. Research-intensive universities have also been slower to adopt community and civic engagement processes than non-research-intensive universities due to their size, complexity, and bureaucratic decentralization, among other factors (Weerts & Sandmann, 2010). However, all universities struggle with adjusting traditional scholarship processes to include or rely on community involvement (Weerts & Sandmann, 2010).

When combined, social and institutional barriers tend to result in research projects that disproportionately benefit and prioritize the researcher and/or institutional agenda over the needs of local communities (Weerts & Sandmann, 2010). This imbalance often results in slower intervention translation as well as treatments, programs, and initiatives that are ineffective for the populations they are meant to serve (Eder et al., 2013). It also reinforces a deeply entrenched lack of trust in health care and clinical research (Eder et al., 2013). There is a high level of frustration among communities that research agendas are formulated well before participants are even approached and often do not align with population needs (Weerts & Sandmann, 2010).

Background

In 2017, Duke's Clinical and Translational Science Institute (CTSI) Community Engaged Research Initiative (CERI) implemented its Population Health Improvement (PHI) Awards pilot program. Although the program's approach has shifted since its inception, the funding mechanism's primary aims have remained: (a) to establish a more equitable grant structure that would foster and build capacity for community and academic researchers to work together and (b) to advance improvements to local health and health care delivery that reduce health disparities within the local community.

A foundational principle of the PHI Awards is the purposeful engagement of community partners and institutional stakeholders through all phases of the program, beginning with the annual drafting and issuance of the request for applications (RFA) and continuing throughout the application, award, and postaward periods. Another abiding principle of the program is to build community research capacity by reducing barriers to leadership and participation as well as improving access to academic resources that could benefit community members or organizations.

The PHI Awards RFA was developed to foster and implement a culture change around academic-community research partnerships: not researching *on* the community but researching *with* the community. The need for this shift in thinking was expressed by community members who were involved in CERI's other programs and services and informed the PHI program's design. The RFA was developed using the Durham Community Health Assessment and institutional, local, and state measures of community research priorities.

Health priorities are reviewed annually to ensure they remain relevant to the community and are then incorporated into that year's RFA as potential topics for research teams to address.

It is also important to acknowledge that, from the outset, the PHI Awards have been funded through the university's own institutional dollars as opposed to external funding mechanisms such as federal or state grants. This financial distinction means that CERI can bypass some barriers that could potentially reinforce challenges to CEnR, such as unfamiliar and complex institutional, federal, and foundation grant reporting requirements and payment or compensation barriers, among others (Carter-Edwards et al., 2021). However, even within a Clinical and Translational Science Award institution, fiscal barriers still exist. These may include significant paperwork; strict timelines; complicated, multistep funding processes; lack of communication among partners, academic researchers, and institutional personnel; payment delays; and more (Carter-Edwards et al., 2021).

Theoretical Framework

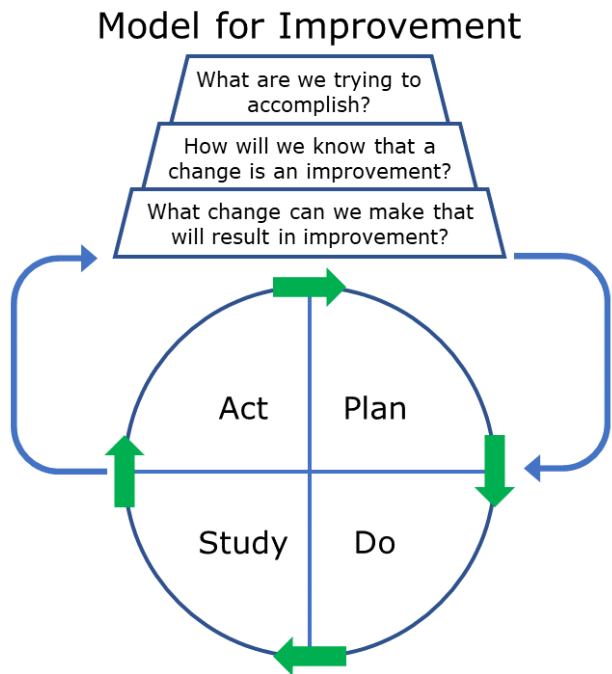
The PHI Awards program has been adapted and improved through the Plan-Do-Study-Act (PDSA) model. Often used in pragmatic interventions, PDSA is a quality improvement method for implementing incremental change (Agency for Healthcare Research and Quality [AHRQ], 2020). Its goal is to change individual elements of a program over time rather than drastically changing all elements at once (AHRQ, 2020). This allows each element to be tested and refined via participant feedback (AHRQ, 2020).

This framework is ideal for the PHI Awards program, which focuses on participant voice and community priorities. During each funding cycle, the program is evaluated and adapted to participant needs; there is no need to skip a program cycle or hire outside consultants to evaluate the program. Rather, the voices of those who know the program best—applicants, awardees, and reviewers—can form the basis for quality improvement.

The Award Process

All PHI Awards proposals must include a university researcher and a community partner researcher. The community partner takes on the role of community investigator, and either the community or academic investigator may lead the establishment and execution of a research partnership. However, Duke partners hold fiduciary responsibility for potential funding

Figure 1. The PDSA Method



Note. Adapted from *Plan-Do-Study-Act (PDSA) directions and examples*, by Agency for Healthcare Research and Quality, September 2020 (<https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html>).

due to institutional funding requirements. Because a pillar of the award process is shared investigator leadership—and because CEnR relationships take time to grow—the process of sowing interest and soliciting applications begins long before the annual RFA is posted. The CERI team actively participates in various internal and external committees so that staff can stay aware of community needs and communicate resources and opportunities. We encourage all potential community applicants to consult with the CERI team as early in the process as possible to help foster connections and promote partnership equity. The CERI team also advocates that the community investigator be an active partner in formulating the research question, designing the study, and developing the partnership.

Community members are integral collaborators during the application review process. Because a diverse range of perspectives is important when determining which research projects are most aligned with community research priorities, reviews involve a broad swath of community and academic partners. Past awardees are encouraged to join the review panel and lend valuable knowledge and expertise, especially

regarding assessments of project feasibility. The committee usually comprises between 10 and 20 members, the exact number of which depends upon the number of applications received. There is even representation across community and academic reviewers.

The committee reviews proposals based on the framework laid out in the RFA and evaluates applications using a standard National Institutes of Health scoring scale of 1 to 9 on each of the framework’s elements. These are the quality of the proposed academic-community partnership, including proposal design and indicators that the project was codesigned; strength of the research question(s) and scientific merit; alignment with local health needs and priorities; potential for sustainable and meaningful community impact; innovation and impact; and equity and feasibility of the project budget. Successful PHI proposals must include a strong degree of community engagement in the project’s development and execution as well as intentional alignment with community health priorities. These priorities are identified by local governments and coalitions such as the Partnership for a Healthy Durham through community health assessments. If it is apparent that the proposal lacks

relevance to the community or relies on superficial community investigator involvement, the project will not be funded.

Originally, grants were awarded in the amount of \$25,000 for a 12-month period. However, award amounts and the number of awards available depend on institutional funding; for example, PHI Awards funding was paused in March 2020 due to institutional uncertainty regarding the COVID-19 pandemic.

In the spirit of community engagement and accountability, PHI Award teams are required to present their results to the community directly. Recipients must include detailed plans to do so in their final grant report. Presentation opportunities include preexisting academic meetings, including Duke's Research Works in Progress and the Duke Center for Community and Population Health Improvement's SYNERGY seminar series, as well as community-facing meetings such as Partnership for a Healthy Durham quarterly meetings or CERI-facilitated community-engaged scholarship symposiums.

Adaptations Over Time

Iterations of the PHI Awards funding approach demonstrate an intentional shift away from traditional academic grant processes. Instead of creating academic-led contracts focused on data and liability rather than roles and relationships, the award process centers the community investigator's voice while anticipating and addressing potential barriers. In the 5 years since the program's inception, staff and recipient experiences have reflected the importance of community engagement principles and strategies, including active listening, responsiveness, collective problem solving, and thoughtful adaptation to partner needs and changes (Clinical and Translational Science Awards Consortium Community Engagement Key Function Committee Task Force, 2011). Upon completion of the first three funding cycles, and in response to applicant, awardee, and staff suggestions, four key structural modifications were made to the program that resulted in the creation of a PHI Navigator role, increased study start-up time, logistical changes to the award process, and innovations to make the process more accessible for community partners and reviewers.

The PHI Navigator

After launching the PHI Awards, it quickly became apparent that fostering CEnR meant more than just providing pilot funding. Rather, it

was necessary to establish and maintain support for community and academic investigators throughout all award phases. Taking a cue from other funding models, such as that at Vanderbilt University, CERI created a navigator role within the PHI Awards team in 2019. The navigator works to ensure applicant success by providing preapplication assistance and facilitating Office of Clinical Research and Office of Research Contracts guidance to hone study design. They also plan for any necessary contractual agreements and address any questions or concerns prior to submission. As soon as successful applicant research teams receive award notices, the PHI Awards navigator schedules individual study team meetings with Office of Clinical Research and Office of Research Contracts staff to finalize study design, begin institutional review board protocols, and complete the agreements necessary for community partners to be actively involved and receive funds in a timely manner. Traditional academic grant approaches tend to leave community investigators out during this process, but all awards study team meetings include both the academic and community investigators along with any other key players in the project.

Throughout the grant year, the navigator continues to provide support and guidance as needed. Examples of such support include helping a team find necessary supplies and resources to complete their study, partnering with a team to conduct a CERI engagement platform like a Community Consultation Studio, or troubleshooting a stalled project. The navigator role was established in response to a complex institutional framework that impedes community access to the research enterprise. This enterprise involves myriad financial and regulatory processes at the academic institution that are difficult for community members and agencies to navigate. The navigator also raises internal awareness about the administrative barriers facing community partners. This means involving key administrative offices in every step of the PHI start-up process, with the goal of eventually deconstructing these barriers.

Study Start-Up Time

CEnR often takes more time than conventional researcher-driven approaches do due to the need for relationship building, power sharing, and collaboration between two or more organizations. In 2019, after providing no-cost extensions to several 2018 awards teams and in consultation with the CTSI Pilots Core, CERI incorporated a

3-month study start-up buffer period, giving teams a total of 15 months to complete their projects. This period's purpose is to help mitigate some of the unique burdens and stressors facing community investigators, including low staff bandwidth, lack of access to legal oversight, and more. The start-up period helps ensure that community investigators have enough time to review legal agreements with their organizational boards and legal advisers. It also accommodates the increased time and effort necessary to navigate the academic research enterprise as well as the time needed to foster relationship building between the academic and community partners.

Application Process and Award Impact

The third major change to the PHI Award process was CERI's response to both the increased number of applications and feedback about the award's impact on project scope. Beginning in 2019, the PHI Awards shifted from an application-only model to a mandatory Letter of Intent (LOI) model. This came about both because of the increase in applications—from 12 in 2017 to 18 in 2018—as well as the quality of applications received. Many applicant teams were unable to demonstrate shared power, did not create collaborative proposals, or were unaware of the principles of CEnR, despite the CERI's efforts.

As opposed to applicants submitting a full application, which can be time-consuming and administratively challenging, the mandatory LOI model provides teams a less burdensome opportunity to present their project for feedback. LOIs are reviewed and assessed by CERI's faculty and staff for CEnR principles, project feasibility, and responsiveness to the RFA. Feedback is shared with applicant teams to address any significant problems before they complete the full application, which increases their chance of submitting a competitive proposal. The LOI also saves valuable time and effort for applicants whose projects do not fit the RFA or CEnR model, as not all LOI teams are invited to submit a full application. Parts of this process involve consultations with the Initiative—both before and after the LOI submission—to solicit the strongest possible proposals for eventual funding.

A second adjustment to the application process was increasing the award amount in Year 4 from \$25,000 to \$50,000 and reducing the overall number of awards. This change was meant to increase the potential impact of each pilot study and to encourage teams to devote increased time

and energy to the study development, application, and implementation processes. It has been successful in doing so; the quality of proposals has increased over time, demonstrated by a higher percentage of teams being invited to complete the full application following the LOI review process. It has also allowed teams to augment the scope of their projects, including increasing the size of intervention participant groups to have more generalizable results.

Community-Friendly Changes

Finally, CERI has instituted several adjustments to the application, consultation, and review processes to ease the impact of institutional barriers and to grow community capacity for research. Starting in 2019, the Initiative began soliciting LOIs and applications via email in PDF format rather than via academic grant proposal software such as My Research Proposal. Submission via email is more straightforward for community members to navigate, and it encourages power sharing by reducing the academic investigator's burden to submit documents. CERI has also collaborated with staff members from the Office of Clinical Research and the Office of Research Contracts to ensure that their interactions with community partners align with CEnR principles. CERI has encouraged tactics such as avoiding academic jargon and approaching conversations with a more collaborative tone. These approaches both empower community partners and build institutional capacity for community-partnered research.

The review process, however, has undergone the most change over time. Since 2018, community reviewers have received considerable training and support from CERI from reviewer selection through the final review process. CERI takes community reviewer comfort very seriously, and staff are always available to answer questions or address concerns. Beginning in 2019, rather than relying on academic-centered review processes, the CERI team instituted two separate 9-point-scale rubrics for reviewers and assigned one academic and one community reviewer per proposal. Collectively, all reviewers comprise the award review panel.

The total number of reviewers on the panel varies each year, but it always includes an even number of community and academic reviewers. The academic rubric includes scores for innovation, potential, scientific soundness, significance, community engagement, possible participant risks, and budget. The community rubric scores priority matching, innovation and impact, collaboration,

and budget equity. This community-oriented rubric allows reviewers to evaluate proposal alignment with community needs, power sharing, and sustainable impact, rather than focusing on solely scientific concerns. The two reviewer scores are weighted equally.

During the 2021 cycle, two innovations were implemented: a community cochair role for the review panel and an expanded reviewer pool. CERI's staff selects the community cochair based on a successfully implemented PHI Award from years past and/or an ongoing relationship with the Initiative and the local community. In the past, this has included members of the CERI Community Advisory Council. The community cochair is part of preparatory meetings, familiarizes themselves with all applications, balances the academic perspective, and co-leads the review meeting alongside the Initiative cochair. Neither cochair votes, but their shared presence and combined efforts promote equity and balance academic and community perspectives. The community cochair may also serve as a community advocate, and their feedback is incorporated to improve the PHI process.

CERI has also built community capacity for CEnR by expanding the reviewer pool. In the first three funding cycles, the same reviewers were tapped every year. However, this decision raised concerns about professionalizing reviewers, limiting the community perspective to just a few voices, and overburdening community members. Since 2021, CERI has found new reviewers each year, thus fulfilling one of the primary goals of the PHI Awards—building capacity for CEnR in the community—by increasing exposure to both the grant and the CEnR model. This approach also diversifies community perspectives and creates new relationships with the Initiative, which improves the CERI's ability to build bridges between the university and the community through its other programs and services.

Key Lessons Learned

Thanks to the iterations across the first 5 years of the program, the PHI Awards team has benefited from the following lessons learned about community-engaged funding programs:

- *Prioritize community voice in every element.* This includes program design, funding requirements, community research priorities, and feedback on all stages of program implementation. For example, the PHI team changed the application method and the

grant timeline after community investigators and reviewers raised concerns.

- *Be prepared to work around institutional norms and processes.* Academic institutions are not set up for community investigators or organizations. Programs like the PHI Awards program can call attention to this problem and even push for change. For example, the university's complex funding processes for noninstitutional partners were brought to light during the PHI process, and CERI has worked with both the university and community partners to proactively address this concern once grants are awarded.
- *Understand past and current institution-community relationships.* These will dictate how the program should be structured, who should have a seat at the table, and how the program will be received in the community. For example, Duke's relationship with the local community has historically been challenged by racial segregation and discrimination. Therefore, ensuring that organizations led by people of color are involved in the PHI process as applicants, reviewers, and awardees is key to reckoning with this institutional history and changing the institution-community narrative.
- *Understand different forms of success.* Academic measures of an intervention's success may or may not be applicable to pragmatic community-engaged projects. Other measures of success can and should include relationship building, increased knowledge and capacity, and project sustainability. For example, collaborations created through the PHI Award process resulted in the founding of a local nonprofit. Although the project that led to the nonprofit did not result in a published manuscript, it is still just as successful as—or more successful than—projects that published in academic journals.

Results

Since 2017, 61 partnerships have applied for the PHI Awards, and 18 teams have been awarded a combined total of \$550,000 for community-engaged population health initiatives. Table 1 is a summary of PHI Awards applicants and awardees from 2017 to 2022. As mentioned above, there was no institutional funding available for the program in 2020 due to a COVID-19-related financial freeze.

As seen in Table 1, PHI community partners include local, regional, and statewide nonprofit organizations, governments, and colleges and universities. Communities and disciplines represented by these partners include the LGBTQ+ community (Triangle Empowerment Center); older adults (Dementia Inclusive Durham, Senior

PharmAssist); historically Black colleges and universities (NC Central University); children, youth, and young families (Diaper Bank of NC, Durham Together for Resilient Youth); food security (End Hunger Durham, Food Insight Group); and groups focused on health disparities that affect communities of color (Lincoln Community Health

Table 1. The First 5 Years of the Initiative’s PHI Awards

Grant Year	LOIs Received	Invited to Apply	Applications Received	Awards Granted	Award Amount	Community Investigator Organizations Awarded
2017	N/A	N/A	12	4	\$25,000	<ul style="list-style-type: none"> • Durham Technical Community College/NC Central University • Diaper Bank of NC • Senior PharmAssist • Lincoln Community Health Center
2018	N/A	N/A	18	7	\$25,000	<ul style="list-style-type: none"> • Food Insight Group • Durham Together for Resilient Youth • Dementia Inclusive Durham • Diaper Bank of NC • Durham County Government • Triangle Empowerment Center • Durham Housing Authority
2019	12	6	5	3	\$25,000	<ul style="list-style-type: none"> • End Hunger Durham • Lincoln Community Health Center • Lung Cancer Initiative of NC
2020	No PHI Awards granted due to the COVID-19 pandemic.					
2021	12	8	8	2	\$50,000	<ul style="list-style-type: none"> • Carolinas Chinese American Civic Center • Lincoln Community Health Center
2022	7	7	6	2	\$50,000	<ul style="list-style-type: none"> • El Centro Hispano • Triangle Empowerment Center

Center, El Centro Hispano, Carolinas Chinese American Civic Center). The health disparities addressed by individual projects included, among others, preterm births in Black women, well-being in people living with dementia, smoking cessation for public housing residents, lung cancer prevention in rural communities, eviction's effect on health, senior hunger prevention, mental health in Asian American communities, food as medicine, and increased PrEP uptake in Black communities.

As of May 2022, five publications, a legislative report, and over \$1.5 million in post-PHI funding had come from the program's 2017 and 2018 recipients alone. However, the program's results include more than grant dollars and publications, which are academic measures of success. One of the most significant impacts has been building community capacity for research—that is, building relationships that bridge the academic-community divide and empowering community members to engage in research. At least half of the funded research partnerships have continued their collaborative research relationships after the end of the initial funding period, thereby improving community-wide capacity for addressing health disparities.

Discussion

Because of the strong partnerships needed to codevelop and implement a research study, academic and community investigators often work together long after their PHI cycle has ended. These new and strengthened partnerships positively impact the local community and beyond through their creation of new interventions, sharing of best practices, and advocacy for policy change. For example, one 2017 award recipient folded their project's efforts into Durham's implementation of a statewide network designed to unite health care and human services organizations with a shared technology platform. Team members were involved with local steering committees and worked to amplify community partner engagement.

Indeed, there is evidence that some research projects supported by PHI Awards are informing community-driven initiatives and the integration of health research. One such example is the formation of a new nonprofit organization, Aging Well Durham, that is dedicated to supporting the community's older adults. A collaboration among academics and a variety of governmental and nonprofit organizations, Aging Well Durham exemplifies the relationships and community capacity that PHI hopes to create. The organization

is planning to incorporate a research review committee and apply for research funding, an effort that is now realistic because of the ever-expanding CEnR network in the community. Aging Well Durham also offers an example of long-term health disparity reduction and improved community outcomes. The nonprofit will both advocate for older adults and help integrate previously disparate organizations and services (primary and geriatric care, health insurance advisers, nonprofits supplying funding for prescriptions, and social services providers) to better serve local older adults, particularly low-income, non-English speaking, and other vulnerable subpopulations.

These stronger relationships also extend to CERI itself. The PHI Award process, along with CERI's other community-facing programs and services, has created academic and community champions both for the PHI Awards and for the Initiative. The process has fostered trust between academic and community entities and increased the local capacity for CEnR. It has also encouraged bidirectional learning, wherein academic partners have learned about local needs and priorities as well as increased their understanding of existing networks. Academic partners have also created new relationships with the community, thereby improving their ability to positively affect population health.

Finally, the PHI Awards have educated and trained scores of community members in the research enterprise, many of whom may have never had the chance to participate via conventional grant opportunities. The awards have empowered community members to advocate for themselves with researchers and in the grant administration process, helped them set boundaries and voice concerns with academic partners, and encouraged them to initiate research projects. The research process becomes more equitable as the community is transformed from research subject to research partner. The award process also allows the community to influence research priorities and solve local problems rather than giving precedence to academic research interests.

Limitations

There are several current limitations to the PHI approach:

- *Framing the process through existing literature.* PHI's innovative nature means that adaptations and outcomes cannot be compared to preexisting programs. This means that the program has evolved based

on the needs and experiences of applicants, reviewers, staff, and awardees.

- *Working with limited funding and time.* No matter the adaptations made to the PHI process, CERI would love to provide even more time and funding to awardees. The collaborations that take place after the award period ends are a great program outcome, but they also suggest that many teams could use more PHI-funded time to develop and implement their projects.
- *Tracking long-term outcomes.* Because PHI is meant to be short-term funding, capturing project outcomes after a final funding report can be difficult. Although CERI has ongoing relationships with many academic and community partners, not all news of their work reaches program staff. Additionally, it is hard to quantify some of the capacity and relationship building outcomes of the program, as those can come to fruition years after the initial funding period.
- *Training academic investigators to apply CEnR.* Since academic investigators are not always familiar with CEnR, they sometimes struggle with applying it to their projects and proposals. Although CERI provides training and consultation, a lack of fluency in CEnR principles can still cause difficulties in the academic-community partner relationship or an inequitable split of resources that must be addressed during the funding period.

Future Directions

Next Steps for the PHI Program

CERI's PHI Awards program has grown and will continue to grow and evolve alongside changing local research and community landscapes. Future directions for the program could include:

- *Modifying the National Institutes of Health review criteria scale.* This review scale is still heavily favored toward academics, who are more familiar than community members are with this type of grant scoring.
- *Offering trainings to community investigators and organizations,* including CITI training and university institutional trainings such as "Research 101." This would be a key next step to building community research capacity not only through the PHI Awards but also in larger projects funded through foundations or government agencies.
- *Further incorporating active community-academic coalitions into the PHI process.*

This would include soliciting new applicants and reviewers and serving as community audiences for project results.

- *Improving longitudinal tracking of projects and results.* Currently, CERI requires midyear and final grant reports and has informal tracking through ongoing relationships with project teams. Awardees are also asked to cite the Clinical and Translational Science Awards grant when submitting project-relevant papers. However, CERI will need to create a more formal tracking process to accurately assess the program's impact over time. This process is currently in development and would benefit from feedback from past award recipients to ensure that such a process is also community friendly.
- *Advocating for more institutional funding* to increase the number of grants awarded per year and/or the award amount. For example, spending down the award amount within 12 months is sometimes difficult for community-based organizations, and some smaller community groups with limited staffing capacity may self-select out of the application process because of the award size. However, this will be considered only after CERI assesses the impact of increased award amounts on research teams.

Any and all changes to future award cycles will be the result of collaboration with and feedback from academic and community applicants, awardees, and reviewers according to the PDSA method.

Implications for CEnR and Practice

The PHI Awards program is an innovative method of community engagement that focuses on supporting health equity from the lens of institutional funding systems and addressing community research priorities in a sustainable way. It contributes to the field of community-engaged scholarship in the following ways:

- *The program serves as a case study for other institutions looking to augment their community engagement within and beyond the field of population health.* Similar structures could be used to conduct CEnR in any research discipline in which the community wishes to participate.
- *The use of the PDSA method is particularly apt for pragmatic and community-engaged programs and interventions.* It allows for

collaborative learning, iterative change, and incremental improvement while simultaneously allowing the program to function as intended.

- *Focusing on the needs of local communities can both forge better institution-community relationships and create fundable, publishable scientific research.* There is no need for a dichotomy between academic rigor and community engagement.
- *Translational research benefits from community engagement programs.* Not only does it build relationships between investigators and community but it also allows collaborators to test and adapt their interventions in the real world. Not all institutions have a translational science center, but all institutions can use community-engaged funding methods to promote translational science.
- *The program provides a unique opportunity for institutions to “put their money where their mouth is.”* In most research, community engagement is usually unfunded or underfunded. However, it is often simultaneously part of the mission or values of academic institutions. By directly funding community-engaged projects, an institution can tangibly support one of their values and create mutual benefit for the communities in which they are located.

As the focus on community engagement in research grows, the CTSI CERI PHI Awards program will continue to work toward its goal of researching with communities, and in so doing foster trust, build relationships, and reduce health disparities.

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