EDITORIAL

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Implementation science grant terminations in the United States



Rinad S. Beidas^{1*}, Gregory A. Aarons², Elvin H. Geng³, Anne E. Sales⁴, Michel Wensing⁵, Paul Wilson⁶ and Dong Roman Xu⁷

Between January and March 2025, hundreds of grants funded by the United States National Institutes of Health (NIH), the largest funder of biomedical research in the world, have been terminated [1, 2]. Termination refers to the cancelling of awarded grants during the ongoing project year or at the time of non-competitive renewal due to reasons such as "this research no longer effectuates the program goals or agency priorities." Importantly, these grants were evaluated and funded following intensive and highly competitive peer review processes followed by the NIH [3].

We seek, in this editorial, to document the termination of grants supporting implementation science for work both in the United States and globally; characterize the topical areas and methods that were most affected; and

- rinad.beidas@northwestern.edu
- ¹ Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA

⁴ Sinclair School of Nursing and Department of Family and Community Medicine, University of Missouri, Columbia, MO, USA consider potential implications of these terminations for the field. In doing so, we call attention to the meritorious and rigorously peer-reviewed work that will no longer be conducted, and systematically shine a light on the lost and attenuated opportunities for progress unless decisions are reversed or alternative funding sources are found.

We reviewed the public website documenting terminations of NIH grants — updated each week — on April 5th, 2025 [2]. Second, a member of our senior editorial team (RSB) reviewed the titles of terminated NIH grants to identify those that included "dissemination" and "implementation" in the title; as well as associated concepts to cast a wide net (e.g., hybrid, acceptability, feasibility, adaptation). Third, RSB read the abstracts from NIH RePORTER, that were associated with titles flagged as potentially implementation science related, for inclusion. For terminated grants that were included, we noted the topical area, methodological innovations where possible, the total award amount, whether the grant was a training grant, and sample size at the individual and unit level (when available). For reliability, other members of the editorial team (MW, GAA) reviewed 350 of the initial titles and double coded 10 of the abstracts; there was near complete agreement. These methods are similar to other recently published work [4, 5].

The accessed dataset listed 702 terminated NIH grants as of April 5th, 2025. We identified 97 (14%) titles that were potentially implementation science related. After reviewing the abstracts of those grants, we identified that 52 fell into the category of implementation science (54% of the sub-sample; 7% of the overall terminated grants). These grants cover a range



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^{*}Correspondence:

Rinad S. Beidas

² Department of Psychiatry, University of California San Diego, La Jolla, CA, USA

³ Center for Dissemination and Implementation, Division of Infectious Diseases, Washington University in St. Louis, St. Louis, MO, USA

⁵ Department for General Practice and Health Services Research, Heidelberg University Hospital, Heidelberg University, Heidelberg, Germany

⁶ Centre for Primary Care and Health Services Research, University of Manchester, UK and NIHR Applied Research Collaboration Greater Manchester, Manchester, UK

⁷ Acacia Lab for Implementation Science, SMU Institute for Global Health (SIGHT), School of Health Management and Dermatology Hospital, Southern Medical University (SMU), Guangzhou, China

of topical areas, including sexual and gender minority health, infectious disease prevention and treatment, and health equity, or closing gaps for populations that experience inequities such as ethnic and racial minority communities and sexual and gender minority communities (Table 1).

Methodological innovations include new trial designs supporting adaptive approaches to implementation (e.g., Learn As you Go (LAGO) [6], Multiphase Optimization Strategy (MOST); [7] a number of trials using the Hybrid type 2 effectiveness-implementation approach; [8] and multidisciplinary approaches at the intersection of behavioral economics, systems dynamic modeling, human centered design, and social network analysis. The total award amount was USD \$165,050,447. The remaining award amount (i.e., the amount that was awarded but will not be provided due to termination) was USD \$85,934,495.Twelve of the 52 (23%) grants were training or career development grants (K-, F-, T-series) affecting 50 scholars; 2 were infrastructure grants associated with the Clinical and Translational Science Awards (CTSA; note, one has been reinstated since termination). The projects included a total of 51,381 study participants and 195 care delivery sites across a diverse set of states in the US and global regions in Southeast Asia and Africa.

This interim assessment raises awareness and bears witness to the disruptions in science in the United States and calls attention to the potential adverse impacts to the field of implementation science. The topics, methods, and geographies of the terminated studies were broad. Terminations affected all ranks of scientists but included many at vulnerable stages of career development. The nature and magnitude of the terminations will diminish current implementation research and may impede progress. We recognize that scientists and organizations will respond to these challenges

Table 1 Topical areas of terminated grants

Торіс	Number terminated
Disease Categories	
HIV	31
Infectious disease	14
Mental Health/Substance Use Disorders	5
Themes	
Health equity	32
Global (i.e., conducted in a country other than the United States)	9
Vaccination	3
Climate	1

differently and in the manner that is most appropriate for their circumstances.

The fact that nearly a quarter (23%) of all the grant terminations affected trainees via individual and institutional training awards — totaling approximately 50 impacted individuals — represents a setback for investments in the next generation of researchers. Training and career development awards support emerging scientists at a vulnerable moment in scientific development before their areas of expertise and institutional roles are firmly set [9].

Furthermore, implementation science already faces a critical shortage of experts while demand for expertise in this area continues to rise sharply. The field has been enthusiastic about capacity building grants [10-16] and these terminations may undermine emerging momentum in the development of the next generation of implementation scientists in the United States and beyond. For example, capacity building grants with a focus on global health can enhance opportunities for learning and collaborative relationships that can foster progress and innovation in implementation science.

Grant terminations affected topics seeking to address conditions that impact millions of people across the United States and the world. Many terminations have struck community engaged work focused on ending the HIV epidemic in communities that have long been hardest hit by HIV [17], including sexual and gender minority individuals [18], ethnic and racial minority individuals [19, 20], and rural and urban communities [21]. Both in the US and globally, crucial progress has been made against HIV in the last decade – progress supported by the now-terminated science. In addition to stymieing our ability to have impact and close implementation gaps, the abrupt termination of these grants may undermine the trust and goodwill many investigators in the field have worked diligently to build over the past decades [22, 23].

Implementation science considers equity in implementation and health outcomes to be a priority, given significant disparities in longevity and health both within the US and globally [24, 25]. Many of these grants sought solutions to the structural and systemic factors that impede closing implementation gaps for all populations [26, 27]. The termination of implementation science related work centering equitable implementation undermines our ability to have reach and impact for all, a core vision of the field.

While the majority of the terminated grants were taking place in the United States, these terminations have the potential to have a global impact. First, 17% of these grants were being conducted in, and with collaborators in other countries, particularly in Africa and Southeast Asia. Like all sciences, implementation research is a global field and lessons learning in one context can often inform others. When a grant on community health worker-led behavioral interventions in Southeast Asia is terminated, it impacts our ability to produce generalizable knowledge that can be used within the United States and elsewhere in the world to improve healthcare.

Terminated grants also includes those on the cutting edge of new methodologies in implementation research and population health sciences more generally. In reviewing the methodological innovations highlighted in the abstracts, emerging approaches (e.g., LAGO, adaptive designs)⁶ to allow more adaptive designs in implementation [7], sophisticated approaches to answer questions related to both clinical effectiveness and implementation strategies (i.e., hybrid effectiveness-implementation trials type 2) [8, 28], and work at important transdisciplinary intersections including behavioral economics [29], dynamic systems modeling [30, 31], human centered design [32, 33], and social network analysis [34], were all impacted, including research that we have explicitly called for in our most recent "refreshed scope" of work editorial [35].

Finally, these terminations have real economic effects. Risks of lay-offs of future promising early career researchers and research staff undermines the returns on investments in science. Research shows that for every \$1 dollar spent by NIH, we reap \$2.56 in economic activity [36]. The total amount of awards terminated was \$165,050,447, suggesting loss of potential return on investment of over \$400 million dollars, when considering that disruption to awards is likely to reduce return on investment for all dollars, not just the amount received.

There were limitations to our approach to coding [4]. For example, 20 out of the 52 grant abstracts did not include any information related to individual or unit level sample size, thus our impact estimates are very conservative and are likely underestimates. Additionally, few abstracts explicitly called out methodological innovations in the proposed work. Thus, there are likely to be innovations that were described in the grant proposal but not identified in abstracts due to space limitations. We elected to use the official list of grant terminations provided by the United States Department of Health and Human Services (HHS); there is another list of terminated grants that includes both HHS reported and self-reported terminations, thus our estimates may not include all terminated grants. Additionally, we did not include non-NIH grants that were terminated including Centers for Disease Control and Prevention and the Substance Abuse and Mental Health Services Administration which may have included components of implementation science but tend to prioritize implementation practice and service provision. Finally, inclusion of titles and abstracts were broadly under the umbrella of implementation science, and may have included studies that may not be within scope of the journal (e.g., hybrid type I effectivenessimplementation trial).

First, we hope that these terminations are reversed and many are going through legal appeal processes. While the terminations have resulted in extreme disruptions to important and impactful work, reinstating these grants would allow knowledge generation to continue and the impacts described above to be mitigated.

Second, we ask the field to grapple with difficult questions including: What will the next phase of implementation science look like? What can be repaired or recovered and in what time frame?

Third, we call for the field to explore more diversified funding opportunities in the future [37]. Implementation science would benefit from investments in a larger number of countries across the world. While the Global South has depended on the Global North for grant opportunities, this typically reflects the research priorities of the Global North [38]. It is possible that the current moment may result in momentum for the Global South to make investments in research with available resources that better reflect in-country priorities. There is also great opportunity for more academic-private partnerships (e.g., industry, pharmaceutical companies) as the skillset of implementation science is relevant across the broader translational research pathway. Implementation is increasingly being considered throughout the life-course of innovation development as countries and companies look to streamline pathways to accelerate scaling of implementation-ready innovations. This means opportunities exist to harness and share learning from the field to ensure that implementation efforts are appropriately planned, potential barriers mitigated, and the chance of adoption success is maximized.

Fourth, we hope that philanthropic donors and foundations might be particularly interested in funding early career researchers who might be at risk for leaving the field if they are not able to find alternative sources of funding. A final possibility is that non-profit health systems and other settings that could benefit from implementation science expertise could consider adopting an embedded implementation scientist model to benefit from their skillsets and continue to develop generalizable knowledge [39, 40].

We hope that current events galvanize our international community of implementation scientists to come together to collaborate and determine how best to ensure the future of a field that is committed to ensuring that the fruits and promise of clinical research reach people in need, and thereby advances the health of all.

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Authors' contributions

RSB drafted this manuscript and coordinated the revision on the basis of extensive critical comments from GAA, EG, AES, MW, PW, and DX. RSB, MW, and GAA reviewed and coded the data. All authors read and approved the final manuscript.

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Ethics approval and consent to participate

Not applicable.

Competing interests

Beidas is Deputy Editor-in-Chief for *Implementation Science*; Aarons and Wilson are Editors-in-Chief for *Implementation Science*. Geng and Xu are Editors-in-Chief for *Implementation Science Communications*. Sales and Wensing are Associate Editors of *Implementation Science* and *Implementation Science Communications*.

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